No reply <iac.noreply@verified.se.com> 12:32 PM (7 minutes ago)

to me

Dear Tshingombe fiston,

Please find your configuration My Configuration created with the Modicon PLC Configurator application.

Your configuration ID: **08b93f14-4d65-41cf-9f4a-a8d9670e17e7**

Bill of Material

Build

No	Reference	Description	Quantity
1	EALBTP23	licence, Ecostruxure Automation Expert, standard engineering buildtime, v23	1
2	EALBFP23	license, EcoStruxure Automation Expert, professional engineering, buildtime, v23	1

Run

No	Reference	Description	Quantity
3	EALDSP	license, EcoStruxure Automation Expert, standard device runtime, add on, v23	6
4	EALDHP	license, EcoStruxure Automation Expert, high availability option, runtime, add on, v23	7
5	EALADP	license, EcoStruxure Automation Expert, run time, application, permanent, 1 user, for ATV dPac	1

6	EALAMP	license, EcoStruxure Automation Expert, run time, application, permanent, 1 user, for M251, M262 dPAC	2
7	EALASP	license, EcoStruxure Automation Expert, run time, application, permanent, 1 user, for M580 dPAC	1
8	EALALP	license, EcoStruxure Automation Expert, run time, application, permannet, 1 user, for M580 dPAC with extensions	1

Run Add-on

No	Reference	Description	Quantity
9	EALH1P	license, EcoStruxure Automation Expert, run time, HMI, permanent, 1 user, for Harmony ST6	1
10	EALH2P	license, EcoStruxure Automation Expert, run time, HMI, permanent, 1 user, for Harmony iPC	1

Service plan

No	Reference	Description	Quantity
11	ECAUTESEAE	Service plan for EcoStruxure Automation Expert - Essential	294

...

Software license configurator

1.

 Software selectionDone
  License selectorDone

3.

Finalize and shareDone

Bill of materials

My Configuration
Verificati
on

No	Reference	Description	Quanti ty
1	CEGVER01A N	license, EcoStruxure Control Engineering, verification, basic, node locked, 1 shot	1

Documentation

No	Reference	Description	Quanti ty
2	CEGDOC01A N	license, EcoStruxure Control Engineering, documentation, basic, node locked, 1 shot	1

Software license configurator

1.

 Software selectionDone
  License selectorDone
  Service plansDone

4.

Finalize and shareDone

Bill of materials

My Configuration
Regul
ar

No	Reference	Description	Quanti ty
1	CEXSPUCZSSPA ZZ	Control Expert S single e-licence	1
2	CEXSPMCZXTPA ZZ	License, EcoStruxure Control	1

Expert, Topology Manager & M580 safety add-on for XL, team floating (10 users), digital

Service plan

No	Reference	Description	Service plan size
3	ECAUTESECE	Service plan for EcoStruxure Control Expert - Essential	283

Your configuration has been saved!
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577e9790-
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Export (1)
Export the bill of material in XLS
.xls
Documentation (2)

Product Data Sheet
.zip

Catalog

Configuration Name :	My Configuration
Configuration ID :	f9d295b2-90b2-4164-b665-04551a1f2f54
Date :	Sun Mar 09 10:52:15 UTC 2025

Operation Server

No	Reference	Description	Quantity
1	EUSOPECZZSP	SW PE OPER SERVER LIC	6

	EZZ		
Operation Client			
No	Reference	Description	Quantity
2	EUSLCCCZZSPEZZ	SW PE CTRL CLIENT LIC	1
3	EUSVCCCZZSPEZZ	SW PE VIEW CLIENT LIC	1
4	EUSLRCCZZSPEZZ	SW PE RED CTRL CLIENT LIC	1
5	EUSVRCCZZSPEZZ	SW PE RED VIEW CLIENT LIC	1
Service plan			
No	Reference	Description	Quantity
6	ECAUTESEPE	Service plan for EPE - Essential	608

Product Selector Tool

This tool is designed to assist you through the product selection process.

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Content Training Installed Base Programs

Overview Product Configurators PLC
Your products have been added to a New Project/BOM View BOM
Select your location
Tshingombe fiston
Software license configurator

1.

 Software selectionDone
  License selectorDone
  Service plansDone

4.

Finalize and shareDone

Bill of materials

Perpetual
My Configuration
Design &
Build

No	Reference	Description	Quantity
1	EALBTP23	licence, Ecostruxure Automation Expert, standard engineering buildtime, v23	1
2	EALBFP23	license, EcoStruxure Automation Expert, professional engineering, buildtime, v23	1

Operate & Maintain

No	Reference	Description	Quantity
3	EALDSP	license, EcoStruxure Automation Expert, standard device runtime, add on, v23	6
4	EALDHP	license, EcoStruxure Automation Expert, high availability option, runtime, add on, v23	7
5	EALADP	license, EcoStruxure Automation Expert, run time, application, permanent, 1 user, for ATV dPac	1
6	EALAMP	license, EcoStruxure Automation Expert, run time, application, permanent, 1 user,	2

7	EALASP	for M251, M262 dPAC license, EcoStruxure Automation Expert, run time, application, permanent, 1 user, for M580 dPAC	1
8	EALALP	license, EcoStruxure Automation Expert, run time, application, permannet, 1 user, for M580 dPAC with extensions	1

Run Add-on

No	Reference	Description	Quantity
9	EALH1P	license, EcoStruxure Automation Expert, run time, HMI, permanent, 1 user, for Harmony ST6	1
10	EALH2P	license, EcoStruxure Automation Expert, run time, HMI, permanent, 1 user, for Harmony iPC	1

Service plan

No	Reference	Description	Service plan size
11	ECAUTESEAE	Service plan for EcoStruxure Automation Expert - Essential	294

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Design & Build;;;						
No;Reference;Description;Quantity						
1;EALBTP23;licence	Ecostruxure Automation Expert	standard engineering buildtime	v23;1			
2;EALBFP23;license	EcoStruxure Automation Expert	professional engineering	buildtime	v23;1		
Operate & Maintain;;;						
No;Reference;Description;Quantity						
3;EALDSP;license	EcoStruxure Automation Expert	standard device runtime	add on	v23;6		
4;EALDHP;license	EcoStruxure Automation Expert	high availability option	runtime	add on	v23;7	

5;EALADP;license	EcoStruxure Automation Expert	run time	application	permanent	1 user	
6;EALAMP;license	EcoStruxure Automation Expert	run time	application	permanent	1 user	
7;EALASP;license	EcoStruxure Automation Expert	run time	application	permanent	1 user	
8;EALALP;license	EcoStruxure Automation Expert	run time	application	permanet	1 user	
Run Add-on;;;						
No;Reference;Description;Quantity						
9;EALH1P;license	EcoStruxure Automation Expert	run time	HMI	permanent	1 user	
10;EALH2P;license	EcoStruxure Automation Expert	run time	HMI	permanent	1 user	
Service plan;;;						
No;Reference;Description;Quantity						
11;ECAUTESEAE;Service plan for EcoStruxure Automation Expert - Essential;294						

Direct Starter
EcoStruxure™ Motor Control Configurator

1.

 Voltage440 V
  Motor detailsIE3-55 kW
  AdjustDone
  OptionsDone

5.

Save & ShareDone

My Configuration

Technology: direct starter
Supply Voltage: 440 V
Standard: IEC (kW)
Motor power: 55 kW
Coordination type: Coordination type 1
Number of product: 2 products
Range: 664
Starter type: Direct Online
PLC Control: no
Breaking performance Iq: 50 kA
Coil Type: Standard
Coil voltage: 230 V AC - 50/60 Hz
Power terminal connection: Screw Clamp
Motor efficiency class: IE3
Breaker

GV4P115N
Motor circuit breaker, TeSys GV4, 3P, 115A, Icu 50kA, thermal magnetic, Everlink terminals
Accessories

GV4AE11
Auxiliary contact, TeSys GV4, 690VAC, 1 NO/NC

GV4AE11
Auxiliary contact, TeSys GV4, 690VAC, 1 NO/NC
Contactor

LC1D115P7
Contactor, TeSys Deca, 3P(3NO), AC-3/AC-3e, <=440V, 115A, 230V AC 50/60Hz coil, screw clamp terminals
Accessories

LADT4
Time delay auxiliary contact block, TeSys Deca, 1NO+1NC, on delay 10-180s, front, screw clamp terminals
My Configuration

ZA
Add to My Products
Technology: direct starter

Supply Voltage: 440 V
Standard: IEC (kW)
Motor power: 55 kW
Coordination type: Coordination type 1
Number of product: 2 products
Range: 664
Starter type: Direct Online
PLC Control: no
Breaking performance Iq: 50 kA
Coil Type: Standard
Coil voltage: 230 V AC - 50/60 Hz
Power terminal connection: Screw Clamp
Motor efficiency class: IE3
Breaker

GV4P115N
Motor circuit breaker, TeSys GV4, 3P, 115A, Icu 50kA, thermal magnetic, Everlink terminals
> Show options (2)
Contactor

LC1D115P7
Contactor, TeSys Deca, 3P(3NO), AC-3/AC-3e, <=440V, 115A, 230V AC 50/60Hz coil, screw clamp terminals
> Show options (1)
Your configuration has been saved!
Copy the configuration ID to your clipboard
dc5b40a4-bb0a-4e45-b277-b7fa55863d6a
Please find a summary of Energy Savings delivered for Drive instead of a fixed speed solution
This data is to be considered with assemption
Export (2)
Print
Export Bill of Material (.xls)
.xls
Documentation (6)

Product Data Sheet

Bill of Material - My Configuration - 6b546e9d-8a2e-424f-af3c-939ea886fdcd - Schneider Electric

Inbox

No reply <iac.noreply@verified.se.com> 12:45 PM (14 minutes ago)

to
me

Dear Tshingombe fiston,

Please find your configuration My Configuration created with the Modicon PLC Configurator application.

Your configuration ID: **6b546e9d-8a2e-424f-af3c-939ea886fdcd**

Bill of Material

Verification

No	Reference	Description	Quantity
1	CEGVER01AN	license, EcoStruxure Control Engineering, verification, basic, node locked, 1 shot	1

Documentation

No	Reference	Description	Quantity
2	CEGDOC01AN	license, EcoStruxure Control Engineering, documentation, basic, node locked, 1 shot	1

Service plan

No	Reference	Description	Quantity

...

[Message clipped] View entire message

Bill of Material - My Configuration - 577e9790-a49e-4c0c-9307-f56f18a5ab60 - Schneider Electric

Inbox

No reply <iac.noreply@verified.se.com> 12:50 PM (10 minutes ago)

to
me

Dear Tshingombe fiston,

Please find your configuration My Configuration created with the Modicon PLC Configurator application.

Your configuration ID: **577e9790-a49e-4c0c-9307-f56f18a5ab60**

Bill of Material

Regular

No	Reference	Description	Quantity
1	CEXSPUCZSSPAZZ	License, EcoStruxure Control Expert, service pack base, small S, 1 user, node locked, digital license	1
2	CEXSPMCZXTPAZZ	License, EcoStruxure Control Expert, with Topology Manager and M580 safety, for XL, node locked, 10 users, digital	1

Service plan

No	Reference	Description	Quantity
3	ECAUTESECE	Service plan for EcoStruxure Control Expert - Essential	283

...

[Message clipped] View entire message

Bill of Material - My Configuration - f9d295b2-90b2-4164-b665-04551a1f2f54 - Schneider Electric

Inbox

No reply <iac.noreply@verified.se.com> 12:54 PM (6 minutes ago)

to
me

Dear Tshingombe fiston,

Please find your configuration My Configuration created with the Modicon PLC Configurator application.

Your configuration ID: **f9d295b2-90b2-4164-b665-04551a1f2f54**

Bill of Material

Operation Server

No	Reference	Description	Quantity
1	EUSOPECZZSPEZZ	SW PE OPER SERVER LIC	6

Operation Client

No	Reference	Description	Quantity

2	EUSLCCCZZSPEZZ	SW PE CTRL CLIENT LIC	1
3	EUSVCCCZZSPEZZ	SW PE VIEW CLIENT LIC	1
4	EUSLRCCZZSPEZZ	SW PE RED CTRL CLIENT LIC	1
5	EUSVRCCZZSPEZZ	SW PE RED VIEW CLIENT LIC	1

Service plan

No	Reference	Description	Quantity
6	ECAUTESEPE	Service plan for EPE - Essential	608

...

Bill of Material - My Configuration - dc5b40a4-bb0a-4e45-b277-b7fa55863d6a - Schneider Electric

Inbox

tshingombe tshitadi <iac.noreply@verified.se.com> 12:58 PM (2 minutes ago)

to
me

Dear tshingombe tshitadi,

Please find your configuration created from: EcoStruxure™ Motor Control Configurator
Configuration link: **My Configuration**

Your configuration ID: **dc5b40a4-bb0a-4e45-b277-b7fa55863d6a**

Motor Starter parameters selected

Technology: Direct Start
Standard: IEC
Supply Voltage: 440 V V
Motor Power: 55 kW
Motor efficiency class: IE3
Breaker

Breaking performance Iq: 50 kA

Contactor

Coil voltage: 230 V AC - 50/60 Hz

Power terminal connection: Screw Clamp

Coil Type: Standard

Bill of Material

Devices	Options	Description	Quantity:
Breaker			
GV4P115N		Motor circuit breaker, TeSys GV4, 3P, 115A, Icu 50kA, thermal magnetic, Everlink terminals	1
	GV4AE11	Auxiliary contact, TeSys GV4, 690VAC, 1 NO/NC	
		Auxiliary Contact Block > Front Function Sd > 1 NO + 1 NC - SD function	1
	GV4AE11	Auxiliary contact, TeSys GV4, 690VAC, 1 NO/NC	
		Auxiliary Contact Block > Front Function On/off > 1 NO + 1 NC - OF function	1
Contactor			

LC1D115P7		Contactor, TeSys Deca, 3P(3NO), AC-3/AC-3e, <=440V, 115A, 230V AC 50/60Hz coil, screw clamp terminals	1
	LADT4	Time delay auxiliary contact block, TeSys Deca, 1NO+1NC, on delay 10-180s, front, screw clamp terminals	
		Time On Delay > Front Clip Position 1 > 10180 s - 1 NO + 1 NC	1
	LX1D8P7		

Spareparts

- Voltage440 V
- Motor detailsIE3-55 kW
- AdjustDone
- OptionsDone

1.

Save & ShareDone

My Configuration
Technology: soft starter
Supply Voltage: 440 V
Standard: IEC (kW)
Motor power: 132 kW
Segment and process: Machine Manufacturing
Application: Standard Machines
Service duty: Normal duty
Coordination type: Coordination type 1
Range: 5745
Communication module: Modbus SL (embedded)
Motor Softstarter connection: In line
Integrated bypass: yes
With trip unit: yes
Breaking capacity: 50 kA
Coil Type: without coil
Breaker

C40H31M320

Circuit breaker, ComPacT NSX400H, 70kA/415VAC, 3 poles, MicroLogic 1.3M trip unit 320A
Contactor

LC1F265
Contactor body,TeSys F,3P(3NO)-AC-3, <=440V 265A without coil
Accessories

LADN01
Auxiliary contact block, TeSys Deca, 1NC, front mounting, screw clamp terminals

LADN11
Auxiliary contact block, TeSys Deca, 1NO+1NC, front mounting, screw clamp terminals

LADN13
Auxiliary contact block, TeSys Deca, 1NO+3NC, front mounting, screw clamp terminals
Soft starter

ATS22C25Q
soft starter for asynchronous motor, Altistart 22, control 230V, 230 to 440V, 75 to 132kW
My Configuration

ZA
Add to My Products
Technology: soft starter
Supply Voltage: 440 V
Standard: IEC (kW)
Motor power: 132 kW
Segment and process: Machine Manufacturing
Application: Standard Machines
Service duty: Normal duty
Coordination type: Coordination type 1
Range: 5745
Communication module: Modbus SL (embedded)
Motor Softstarter connection: In line
Integrated bypass: yes
With trip unit: yes

Breaking capacity: 50 kA
Coil Type: without coil
Breaker

C40H31M320
Circuit breaker, ComPacT NSX400H, 70kA/415VAC, 3 poles, MicroLogic 1.3M trip unit 320A
Contactor

LC1F265
Contactor body,TeSys F,3P(3NO)-AC-3, <=440V 265A without coil
> Show options (3)
Soft starter

ATS22C25Q
soft starter for asynchronous motor, Altistart 22, control 230V, 230 to 440V, 75 to 132kW
Your configuration has been saved!
Copy the configuration ID to your clipboard
98d8730c-cef0-4fd3-8fbe-b6f8b3c1d66b
Please find a summary of Energy Savings delivered for Drive instead of a fixed speed solution
This data is to be considered with assemption
Export (2)
Print
Export Bill of Material (.xls)
.xls
Documentation (6)

Product Data Sheet
.zip

Variable Speed Drive
EcoStruxure™ Motor Control Configurator
My Configuration
Technology: variable speed drive
Supply Voltage: 480 V
Standard: IEC (kW)
Motor power: 132 kW
Segment and process: Machine Manufacturing
Application: Standard Machines
Service duty: Heavy duty
Range: 63124
Communication module: Modbus SL

Installation type: wall mounted
Protection level: IP21
With braking unit: yes
With trip unit: yes
Breaking capacity: 50 kA
Coil Type: without coil
Breaker

C40H31M320
Circuit breaker, ComPacT NSX400H, 70kA/415VAC, 3 poles, MicroLogic 1.3M trip unit 320A
Accessories

29452
Low level auxiliary contact, circuit breaker status OF/SD/SDE/SDV, 1 changeover contact type

29452
Low level auxiliary contact, circuit breaker status OF/SD/SDE/SDV, 1 changeover contact type

29452
Low level auxiliary contact, circuit breaker status OF/SD/SDE/SDV, 1 changeover contact type
Contactor

LC1F265
Contactor body,TeSys F,3P(3NO)-AC-3, <=440V 265A without coil
Accessories

LA4FRCP
TeSys F - suppressor module - RC circuit - 127...240 V AC

LADT0
Time delay auxiliary contact block, TeSys Deca, 1NO+1NC, on delay 0.3-3s, front, screw clamp terminals

LADT2
Time delay contact block,TeSys Deca,1NO+1NC,on-delay 1-30s,front
Drive

ATV930C16N4
variable speed drive, Altivar Process ATV900, ATV930, 160kW, 380 to 480V, with braking unit, IP20
My Configuration

ZA
Add to My Products
Technology: variable speed drive
Supply Voltage: 480 V
Standard: IEC (kW)
Motor power: 132 kW
Segment and process: Machine Manufacturing
Application: Standard Machines
Service duty: Heavy duty
Range: 63124
Communication module: Modbus SL
Installation type: wall mounted
Protection level: IP21
With braking unit: yes
With trip unit: yes
Breaking capacity: 50 kA
Coil Type: without coil
Breaker

C40H31M320
Circuit breaker, ComPacT NSX400H, 70kA/415VAC, 3 poles, MicroLogic 1.3M trip unit 320A
> Show options (3)
Contactor

LC1F265
Contactor body,TeSys F,3P(3NO)-AC-3, <=440V 265A without coil
> Show options (3)
Drive

ATV930C16N4
variable speed drive, Altivar Process ATV900, ATV930, 160kW, 380 to 480V, with braking unit, IP20
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96d5a340-770b-4927-bab7-5c538288d832

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Documentation (6)

Product Data Sheet
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CAD files
Modicon PLC

1.

HomeDone
PLC selectionDone
Graphical editorDone
Power supplyDone
AccessorizeSkipped

6.

Finalize and shareDone

My Configuration
Range
Pacdrive LMC
Power supply
24 Vdc
Field bus protocols
EtherNet/IP; Sercos

Bill of materials

Add to Favorites
Controller + I/O

No	Reference	Description	Quantity
1	LMC216CAA10000	Motion controller LMC216 16 axis - Acc kit - Basic	1
2	ABL8WPS24200	Regulated switch power supply, modicon power supply, 3 phases, 380 to 500V AC, 24V, 20A	1

3	GV2ME06	Motor circuit breaker, TeSys Deca, 3P, 1 to 1.6A, thermal magnetic, screw clamp terminals, button control	1
4	ABL8BBU24200	battery control module, phaseo ABL7 ABL8, 24 to 28.8V DC, phaseo ABL7 ABL8, 24V, 20A, for regulated SMPS	1
5	ABL8BBU24400	battery control module, phaseo ABL7 ABL8, 24 to 28.8V DC, phaseo ABL7 ABL8, 24V, 40A, for regulated SMPS	1
6	BVS480XDPDR	Easy UPS control module, 24V DC-DC, DIN Rail, Industrial, 20A	1
7	XB005XPDR	Easy UPS battery module, 24V DC-DC, DIN Rail, Industrial, 4.5Ah	1

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Documentation (6)

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Instruction Sheet
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User guide
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Certificate

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Catalog
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Feedback

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Inbox

tshingombe <iac.noreply@verified.se.com> 1:09 PM (12 minutes ago)

to
me

Dear tshingombe,

Please find your configuration created from: EcoStruxure™ Motor Control Configurator
Configuration link: **My Configuration**

Your configuration ID: **98d8730c-cef0-4fd3-8fbe-b6f8b3c1d66b**

Motor Starter parameters selected

Technology: Soft Starter
Standard: IEC
Supply Voltage: 440 V V
Motor Power: 132 kW
Segment and Process: Machine Manufacturing
Application: Standard machines
Heavy Duty selection: no
Breaker

Breaking capacity: 50 kA

With trip unit: yes

Contactor

Coil voltage: n/a

Coil Type: without coil

Soft Starter

Integrated bypass: yes

Bill of Material

Devices	Options	Description	Quantity:
Breaker			
C40H31M320		Circuit breaker, ComPacT NSX400H, 70kA/415VAC, 3 poles, MicroLogic 1.3M trip unit 320A	1
	LV432513		
		Spareparts	1
Contactor			
LC1F265		Contactor body,TeSys F,3P(3NO)-AC-3, <=440V 265A without coil	1
	LADN01	Auxiliary contact block, TeSys Deca, 1NC, front mounting, screw clamp terminals	
		Auxiliary Contact For Standard Environment > Right > 1 NC	1
	LADN11	Auxiliary contact block, TeSys Deca, 1NO+1NC, front mounting, screw clamp terminals	
		Auxiliary Contact For Standard Environment > Front Clip Position 1 > 1 NO + 1 NC	1
	LADN13	Auxiliary contact block, TeSys Deca, 1NO+3NC, front mounting, screw clamp terminals	
		Auxiliary Contact For Standard Environment > Front Clip Position 1 > 1 NO + 3 NC	1
Soft Starter			
ATS22C25Q		soft starter for asynchronous motor, Altistart 22, control 230V, 230 to 440V, 75 to 132kW	1

Bill of Material - My Configuration - 96d5a340-770b-4927-bab7-5c538288d832 - Schneider Electric

Inbox

tshingombefiston <iac.noreply@verified.se.com>

1:12 PM (9 minutes ago)

to
me

Dear tshingombefiston,

Please find your configuration created from: EcoStruxure™ Motor Control Configurator
Configuration link: **My Configuration**

Your configuration ID: **96d5a340-770b-4927-bab7-5c538288d832**

Motor Starter parameters selected

Technology: Variable Speed Drive
Standard: IEC
Supply Voltage: 480 V V
Motor Power: 132 kW
Segment and Process: Machine Manufacturing
Application: Standard machines
Heavy Duty selection: no
Breaker

Breaking capacity: 50 kA

With trip unit: yes

Contactor

Coil voltage: n/a

Coil Type: without coil

Drive

Installation type: wall mounted

With braking unit: yes

Protection level: IP21

Bill of Material

Devices	Options	Description	Quantity:
Breaker			
C40H31M320		Circuit breaker, ComPacT NSX400H, 70kA/415VAC, 3 poles, MicroLogic 1.3M trip unit 320A	1
	29452	Low level auxiliary contact, circuit breaker status OF/SD/SDE/SDV, 1 changeover contact type	
		Add-on Auxiliary Contact-low Level > Front Function Sde > SDE function	1
	29452	Low level auxiliary contact, circuit breaker status OF/SD/SDE/SDV, 1 changeover contact type	
		Add-on Auxiliary Contact-low Level > Front Function Sd > SD function	1
	29452	Low level auxiliary contact, circuit breaker status OF/SD/SDE/SDV, 1 changeover contact type	
		Add-on Auxiliary Contact-low Level > Front Function On/off > ON/OFF	1
	LV432513		
		Spareparts	1
Contactor			
LC1F265		Contactor body,TeSys F,3P(3NO)-AC-3, <=440V 265A without coil	1
	LA4FRCP	TeSys F - suppressor module - RC circuit - 127...240 V AC	
		Rc Circuit > Clip On Rail Mounting > 127240 V AC	1
	LADT0	Time delay auxiliary contact block, TeSys Deca, 1NO+1NC, on delay 0.3-3s, front, screw clamp terminals	
		Time On Delay > Front Clip Position 1 > 0.13 s - 1 NO + 1 NC	1
	LADT2	Time delay contact block,TeSys Deca,1NO+1NC,on-delay 1-30s,front	
		Time On Delay > Front Clip Position 1 > 0.130 s - 1 NO + 1 NC	1

	LA5FH431		
		Spareparts	1
Drive			
ATV930C16N4		variable speed drive, Altivar Process ATV900, ATV930, 160kW, 380 to 480V, with braking unit, IP20	1

Bill of Material - My Configuration - 36455ef8-f6c2-460a-91c3-15d69cf9452f - Schneider Electric

Inbox

No reply <iac.noreply@verified.se.com> 1:16 PM (6 minutes ago)

to
me

Dear Tshingombe fiston,

Please find your configuration My Configuration created with the Modicon PLC Configurator application.

Your configuration ID: **36455ef8-f6c2-460a-91c3-15d69cf9452f**

Bill of Material

Bom level	Position	Reference	Description	Quantity
My Configuration	1	LMC216CAA10000	Motion controller LMC216 16 axis - Acc kit - Basic	1
My Configuration	2	ABL8WPS24200	Regulated switch power supply, modicon power supply, 3 phases, 380 to 500V AC, 24V, 20A	1
My Configuration	3	GV2ME06	Motor circuit breaker, TeSys Deca, 3P, 1 to 1.6A, thermal magnetic, screw clamp terminals, button control	1

My Configuration	4	ABL8BBU24200	battery control module, phaseo ABL7 ABL8, 24 to 28.8V DC, phaseo ABL7 ABL8, 24V, 20A, for regulated SMPS	1
My Configuration	5	ABL8BBU24400	battery control module, phaseo ABL7 ABL8, 24 to 28.8V DC, phaseo ABL7 ABL8, 24V, 40A, for regulated SMPS	1
My Configuration	6	BVS480XDPDR	Easy UPS control module, 24V DC-DC, DIN Rail, Industrial, 20A	1
My Configuration	7	XB005XPDR	Easy UPS battery module, 24V DC-DC, DIN Rail, Industrial, 4.5Ah	1

...

Bill of Material - My Configuration - 9988cbd9-4fe8-473c-927f-c3473aaf67af - Schneider Electric

Inbox

No reply <iac.noreply@verified.se.com> 1:21 PM (1 minute ago)

to
me

Dear Tshingombe fiston,

Please find your configuration My Configuration created with the Modicon PLC Configurator application.

Your configuration ID: **9988cbd9-4fe8-473c-927f-c3473aaf67af**

Bill of Material

Bom level	Position	Reference	Description	Quantity

My Configuration	1	TM171ODM22R	Controller, Modicon M171/M172/M173, optimized display 22 IO, Modbus	1
My Configuration	2	TM171ACB4OI1M	Modicon M171 Optimized LV Connector 1m cable	2
My Configuration	3	TM171ACB4OAO1M	Modicon M171 Optimized AO Connector 1m cable	1
My Configuration	4	TM171ACB4OAO2M	Modicon M171 Optimized AO Connector 2m cable	1
My Configuration	5	TM171DLED	Modicon M171 Optimized Display LED	1
My Configuration	6	TM171DLCD2U	Modicon M171 Optimized Display LCD	1
My Configuration	7	TM171DWAL2U	Modicon M171 Optimized Wall thermostat without backlight	1
My Configuration	8	TM1STNTCRN52015	NTC 1,5m IP68 5x20 - 50+110°C Grey	1
My Configuration	9	TM1STNTCRN5201P	NTC 1,5m IP68 5x20 - 50+110°C Grey	1
My Configuration	10	TM1STNTCRN52030	NTC 3,0m IP68 5x20 - 50+110°C Grey	1
My Configuration	11	TM171VEVA2	EEV Driver, Actuator	1
My Configuration	12	TM171VEVD4	EEV Driver, Autonomous & Hardwired	1
My Configuration	13	TM171VEVM4	EEV Driver, Autonomous & Modbus	1

...

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Catalog | July 2024

Software-defined Automation

Software version v24.0

EcoStruxure™

Automation Expert

Industrial Automation systems

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Connections and schemas, Performance curves

– Product image, Instruction sheet, User guide, Product certifications,

End of life manual

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• Optimized search by commercial references

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EcoStruxure™

Automation Expert

Industrial automation systems

EcoStruxure Automation Expert

General presentation

Libraries

Operator Station

Automation Expert HMI

Runtime

Modicon dPAC

Engineering

Automation Expert

Communications

X80 TM3 I/O & Enc

M580

dPAC

M2xx

dPAC

ATV

dPAC

Soft

dPAC

Linux/HA

Soft

dPAC

Windows

Automation ExpertHistorization

Automation Expert

Archive

Control Room

AVEVA System Platform

CRD + X80

EcoStruxure Automation Expert consists of a suite of integrated hardware and software solutions:

> EcoStruxure Automation Expert build time - engineering, monitoring, and management environment

> Distributed Programmable Automation Controller (dPAC) platforms with the Universalautomation.org Shared Source Runtime engine:

b ATV dPAC for Altivar

b Modicon M251 dPAC/TM3 I/O

b Modicon M262 dPAC/TM3 I/O

b Modicon M580 dPAC/X80 I/O

> Plus, innovative new software-based controllers:

b Soft dPAC for Linux™, for standalone and high availability configurations

b Soft dPAC for Windows™ , for standalone configurations

> EcoStruxure Automation Expert - HMI, a fully integrated, object-oriented industrial visualization solution

> EcoStruxure Automation Expert - Archive, a centralized solution for the historization of process data, alarms, and trends

> Schneider Electric Libraries, a comprehensive set of hardware-independent libraries, ranging from basic functions up to segment solutions

> Asset Link for Bulk Engineering to extract data from engineering tools for automated application generation

> Asset Link for AVEVA OMI to create application objects (AppObjects) in the AVEVA System Platform in an automated workflow

Note: UniversalAutomation.org is an independent, non-for-profit association managing the implementation of an industrial automation shared

source runtime execution engine, based on the IEC 61499 standard that is an object-oriented further development of IEC 61131 with the

cyclical execution model of IEC 61131 replaced by an event-based model. This new level of shared technology provides the basis for an

ecosystem of portable, interoperable, “plug and produce” solutions and creates an entirely new category within industrial automation.

EcoStruxure Automation Expert is a software-defined industrial automation system,

a new category of industrial automation that leverages innovative technology to

enable industrial operators to realize a step-change improvement over traditional

process control systems and deliver significant advancement in productivity, quality,

flexibility, and security throughout the entire lifecycle of industrial assets.

EcoStruxure Automation Expert represents a new approach to designing, building, operating, and maintaining

industrial automation systems that offers a unique technology mix to define a new category of integrated

automation systems.

Complexity mastered

Systems, devices, services, and assets are natively represented as ready-to-use software objects called

composite automation types (CATs) that encapsulate internal behaviour and simplify functional interfaces. An

object-oriented approach promotes code reuse, standardization on best practice, and helps manage complexity

while providing the fundamental building blocks for the creation of state-of-the-art cyber-physical systems. CAT

objects follow a type/instance relation and can be combined to create new objects that encapsulate:

b Control logic

b HMI/SCADA visualization

b I/O and device communications

b Simulation and test rigging

b Documentation

Decoupling the application from implementation

EcoStruxure Automation Expert addresses full automation system engineering and extends the best features of

classic PLC and DCS control approaches to a new generation of automation system that completely decouples

the application design from runtime deployment, enabling automation professionals to focus on these tasks

independently in their project lifecycle. Applications are portable, reusable, and interoperable across runtime

platforms, meaning deployment decisions are made just in time and on the fly, enabling exceptional system agility.

Efficient engineering

EcoStruxure Automation Expert build time provides a single, modular engineering environment for all tasks for

engineering, monitoring, and managing the complete automation system including hardware and software,

control, and visualization. It automates low value engineering and integration tasks, reducing engineering effort

and sources of error by Asset Link to perform digital engineering. Complex functions can be encapsulated into

manageable objects, enabling non-technical users to understand and manage complex systems. Cross

communications are transparent and implicit regardless of physical location, requiring zero engineering

consideration.

Common runtime environment

Through the implementation of the shared source Runtime engine provided by universalautomation.org across

hardware and software platforms, exceptional re-usability, scalability, and architectural flexibility are now

available. Application portability provides cost savings through the decoupling of the lifecycles of software and

hardware systems.

Simple system orchestration

EcoStruxure Automation Expert was designed with the complete lifecycle of an automation system in mind, with

functions to facilitate management and monitoring of multiple assets and devices at scale. With a single user

environment covering the entire system scope including third-party devices, orchestration of complex,

heterogenous systems becomes simpler.

Native IT integration

Modern automation systems generate increased value when coupled with business information and hence wider

IT ecosystems. EcoStruxure Automation Expert provides an expandable platform for Industry 4.0 solutions with

support for high-level programming, modular systems design, and open standards. Thanks to event-driven

execution and object-oriented design, EcoStruxure Automation Expert applies to IT programming language

standards.

Cybersecurity

EcoStruxure Automation Expert includes robust support for cybersecurity including credential management and

secure communications. User and device credentials are managed by the EcoStruxure Automation Expert build

time environment, and secure communications are available between controllers, HMI, SCADA, and third-party

devices.

Industrial automation systems

EcoStruxure Automation Expert

General presentation

(continued)

EcoStruxure Automation Expert Software

The EcoStruxure Automation Expert software offer includes:

b The EcoStruxure Automation Expert engineering environment, with add-ons for integration of AVEVA Engineering and AVEVA System

Platform software

b EcoStruxure Automation Expert HMI Runtime

b EcoStruxure Automation Expert Archive

b Asset-oriented application libraries

EcoStruxure Automation Expert engineering

EcoStruxure Automation Expert is an asset-based, fully-integrated engineering environment that allows portable, IEC 61499-standard-based

automation systems to be managed within a single environment. EcoStruxure Automation Expert provides the capability to:

b Design and manage asset-based applications using object libraries based on multifaceted models (asset logic, operating modes, HMI

symbols and faceplates (including alarms and trends), I/O interface, and asset documentation)

b Design the process based on asset-oriented objects with single line connections

b Create rich process displays to monitor and control the process from the control room or line terminal by dragging and dropping asset-based

objects

b Manage a single solution independently of the number of controllers and HMI stations

b Design the application solution independently of the hardware configuration

b Test and simulate the control and HMI for the whole solution

b Create and modify procedural automation CATs based on S88 state model with graphical editor

b Support multi-user change management through SVN client integration

b Design, configure, and manage network and device topologies

b Flexibly deploy applications to multiple hardware or software platforms based on a common runtime

b Automatically discover and diagnose compatible runtime devices

b Automate bulk generation of asset instances from AVEVA Engineering or DEXPI files

b Automate bulk generation of asset instances for AVEVA System Platform

b Embedded AVEVA industrial graphic editor in EcoStruxure Automation Expert build time to create new AVEVA industrial graphics or to reuse

graphics from existing applications

b Secure the automation system by managing authentication with encrypted communication and security certificates at solution and devices level

EcoStruxure Automation Expert V24.0 build time

Industrial automation systems

EcoStruxure Automation Expert

Software

Presentation

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EcoStruxure Automation Expert Software

EcoStruxure Automation Expert – HMI

EcoStruxure Automation Expert HMI is a tightly integrated human-machine interface designed for EcoStruxure Automation Expert applications.

Its features include:

b Compatibility with WindowsTM OS/LinuxTM OS hardware or Schneider Electric Harmony ST6

b Seamless management of controller and HMI communication

b Support for single/multi operator stations with cloning

b User management for access control

b Multi-language application

b Monitoring of runtime connections

The EcoStruxure Automation Expert HMI Client for WindowTM/LinuxTM operating system can be installed on various hardware such as

Workstations, Industrial PCs, and Edge Boxes, provided they meet the minimum system requirements. It ensures high-performance, seamless

management of controller and HMI communication.

Furthermore, the EcoStruxure Automation Expert HMI Client for Harmony ST6 is compatible with HMIST6200, HMIST6400, HMIST6500,

HMIST6600, HMIST6700, HMISTM6400, and HMISTM6200 touch panel screens. It offers seamless management of controller and automatic

HMI communication, particularly ideal for a small number of assets.

EcoStruxure Automation Expert – Archive

EcoStruxure Automation Expert Archive operates as a highly integrated local data historian, providing minimal engineering effort historization

and retrieval of live process data, alarms, and events within Automation Expert HMI and the capability to integrate with larger enterprise data

storage systems by Structured Query Language (SQL). It is compatible with Windows 10, Windows 11, and Linux operating system.

EcoStruxure Automation Expert – AVEVA System Platform integration

EcoStruxure Automation Expert includes native support for System Platform - AVEVA’s real-time operations control platform for supervisory,

HMI, SCADA, and IIoT applications. EcoStruxure Automation Expert is capable of auto-generating OPC UA-based secure communications

between platforms and generate AVEVA System Platform-compatible graphics for clean integration. Furthermore, it now embeds the AVEVA

Industrial Graphics editor so that users no longer need to move from EcoStruxure Automation Expert buildtime to AVEVA buildtime, providing

unpreceeded integration.

Automation

Expert version

Library compatibile version Platform version for Asset Link Version for Asset Link and AVEVA

Industrial Graphics

V23.0 AVEVA System Platform 2020

R2 SP1

AVEVA System Platform 2020 R2 SP1 or

later

No AVEVA Industrial Graphics support

V23.1 AVEVA System Platform 2023 AVEVA System Platform 2020 R2 SP1 or later

(New Galaxy creation is possible only with

Library compatible version)*

AVEVA System Platform 2023 or later

V24.0 AVEVA System Platform 2023

or R2 SP1

AVEVA System Platform 2020 R2 SP1 or later

(New Galaxy creation is possible only with

AVEVA System Platform 2023 R2 SP1)*

AVEVA System Platform 2023 or later

(New Galaxy creation is possible only with

AVEVA System Platform 2023 R2 SP1)*

*Only Select Existing Galaxy from the configurator is possible if Library compatible version is not available with the user.

Embedded AVEVA industrial graphic editor in EcoStruxure Automation Expert build time

Industrial automation systems

EcoStruxure Automation Expert

Software

Presentation (continued)

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EcoStruxure Automation Expert Software (continued)

EcoStruxure Automation Expert – Libraries

EcoStruxure Automation Expert includes a set of application libraries

with generic process and control modules such as motors / valves

and segment-based libraries with equipment modules that include multiple facets – logic, Automation Expert HMI, AVEVA System Platform template, and documentation within a single package to minimize the engineering time.

EcoStruxure Automation Expert also includes a hardware library for easier integration of the most common Schneider Electric and Technical Partner’s field devices through Modbus TCP / Ethernet IP that provides the mapping, HMI, and documentation to be used in the application. With version 24.0 release, the free libraries included are:

b Field Device

b Base and common process

b Sequence management and Phase Management

b Liquid food

b Water & Wastewater (including desalination)

b Single line power monitoring

b Conveying

These libraries include HMI objects that are compatible with Windows and Linux Ubuntu native HMI runtime, including the Harmony HMIST6xxx and HMISTM6xxx panels.

Additionally, Universal Automation vendors provide specific hardware libraries to deploy EcoStruxure Automation Expert applications to their offer.

With this release the library updates include:

b Elementary blocks with easier customization covering basic application functions like alarms, conditions, owners, and signal conditioning that

are used by other application CATs – SE.App2Base.

b Library of application CATs with easier customization to address common process assets or functions like digital I/O, analog I/O, motors,

valves, and flowcontrol. There are multiple layers of each object available which can be used and customized for various application

purposes – SE.App2CommonProcess.

b State management functionality for generic application (State Manager) as well as ISA-88 based application (Phase Manager). Phase

Manager also includes a phase logical interface that accepts commands from external batching interfaces such as AVEVA Batch

Management and returns the phase manager status – SE.App2StateManagement.

Example of HWCAT symbol and faceplate

on EcoStruxure Automation Expert HMI

Example of Application

CAT symbol and faceplate

on AVEVA OMI

Application – Common Process

Setpoint, Signal Processing, Motors, Valves,

Process Control, Flow Control, Pump Set

M580 dPAC

CPU,

X80 I/O Modules

M251 dPAC

CPU,

TM3 I/O Modules

M262 dPAC

CPU,

TM3 I/O Modules

ATV dPAC Soft dPAC

I/O Modbus

Read/Write

registers

Field Device

Modbus/TCP

ATV, ATS,

Lexium, PowerMeter

Gateways

Modbus Gateway,

UDP Gateway

HARDWARE

SPECIALIZED APPLICATION

GENERAL APPLICATION

Application – Base

Deviation Alarm, Limit Alarm,

Range of Change Alarm,

State Alarm Conditions, Owner

Application 2 – Base

Deviation Alarm, Limit Alarm,

Range of Change Alarm,

State Alarm Conditions, Owner

Application – Sequence

Sequence Step,

Sequence Action

Application 2 – Common Process

Setpoint, Signal Processing, Motors, Valves,

Process Control, Flow Control, Pump Set

Segment Applications

WWW, Single Line Power Monitoring, Conveying,

Liquid Food, State Management

Segment Applications 2

State Management

Presentation (continued)

EcoStruxure Automation Expert Software (continued)

EcoStruxure Automation Expert – Libraries (continued)

EcoStruxure Automation Expert libraries

Library name Short description Extended description

Runtime.Base Standard blocks This library contains the basic function blocks to be used for:

b Runtime management

b Arithmetic functions

b Logic functions

b Format conversion

b Event management

b etc.

SE.AppBase Elementary block of the application Library of application CATs covering basic application functions like

alarms, conditions, owners, and signal conditioning that are used by

other application CATs like the ones from SE.AppCommonProcess

SE.App2Base Elementary blocks of the application SE.AppBase objects are redesigned to make customization easier.

These objects will be used by other redesigned libraries.

SE.AppSequence Sequence control This library has a set of application CATs that allows you to create

sequential control algorithms with steps and transitions to command

control modules. This library works with both SE.AppCommonProcess

and SE.App2CommonProcess.

SE.AppCommonProcess Common process applications Library of application CATs to address common process assets or

functions like digital I/O, analog I/O, motors, valves, flow control, etc.

These types of object can be used in any industrial application as well as

in process control in manufacturing applications

SE.App2CommonProcess Common process application SE.AppCommonProcess objects are redesigned to make customization

easier. There are multiple layers of each object available, which can be

used and customized for various application purposes.

SE.AppConveying Conveying Library of application CATs to address common equipment such as

conveyors, sorters, transfer tables, and turntables, typically used in

logistic hubs and distribution centers

SE.AppLiquidFood Liquid and Food This library has an application CAT to control the seats of mixproof valves

used in Liquid and Food applications

SE.SingleLinePowerMonitoring Low and medium power monitoring This library includes templates with common functions for electrical

objects such as busbars, sources, infeeds, and loads that can be

connected to energy management hardware CATs

SE.AppStateManagement State management This library is used to monitor and manage interface states of the

machine:

b receiving control commands and providing machine information

b managing acting state sequence and transitions

SE.App2StateManagement State management This library is used to provide state management functionality for generic

application (State Manager) as well as ISA-88 based application (Phase

Manager). Phase Manager also includes a phase logical interface that

accepts commands from external batching interfaces such as AVEVA

Batch Management and returns the Phase Manager status.

SE.AppProcedure Procedure control This library is used to monitor and manage phases based on ISA-88

associated with sequences in coordination with sequence control blocks

from SE.AppSequence. It also includes a phase logical interface that

accepts commands from external batching interfaces such as AVEVA

Batch Management and returns the phase manager status.

SE.AppWWW Waste and wastewater This library contains blocks used to monitor and manage control

sequences like aeration and dual media filter for Water and Wastewater

applications

SE.DPAC dPAC hardware controllers Library containing the dPAC device types

AVEVA.IndustrialGraphicsLibrary Industrial graphics library Industrial Graphics are vector-based graphics that can be scaled,

animated, embedded into application objects, and deployed. The library

contains common industrial equipment. You can modify graphics or add

graphics to the library by creating new graphics using the Industrial

Graphic Editor.

SE.EAEPortal AVEVA System Platform Device type The AVEVA System Platform device type is required by Asset Link for

establishing communication and creating the application objects

automatically in AVEVA System Platform

SE.FieldDevice Field device hardware CATs This library has ready-to-use hardware CATs for motor control, energy

management, machine safety, and weighing from Schneider Electric,

allowing dPAC communication with these devices by Modbus TCP or

Ethernet IP depending on the device

SE.HwCommon Common hardware CAT functions Library of functions used by the various hardware CAT libraries

SE.IoATV Variable speed drive I/O services for ATV dPAC Library of hardware CATs for Altivar I/O (local and modules) used for the

Altivar dPAC module hardware configuration

Presentation (continued)

EcoStruxure Automation Expert Software (continued)

EcoStruxure Automation Expert – Libraries (continued)

EcoStruxure Automation Expert libraries (continued)

Library name Short description Extended description

SE.IoNet UDP gateway Library of hardware CATs to enable UDP communication

SE.IoTMx TM I/O services for M251d/M262d Library of hardware CATs for TMp I/O modules used for M251d and M262d hardware

configuration

SE.IoX80 X80 I/O services for M580d Library of hardware CATs for X80 I/O modules used for M580d hardware configuration

SE.ModbusGateway Standard Modbus gateway Library of hardware CATs to enable Modbus TCP communication with import of data

description file

SE.Standard EcoStruxure Automation Expert HMI

device type

Library with EcoStruxure Automation Expert HMI device type

Standard.IoEtherNetIP Standard Ethernet IP scanner functions Library of hardware CATs used for EIP scanner configuration

(Implicit use by the EcoStruxure Automation Expert system when using the EIP

scanner and also to add custom EIP connections)

Standard.IoModbus Standard Modbus functions Library of hardware CATs to enable Modbus client communication

Standard.IoModbusSlave Standard Modbus server functions Library of hardware CATs to enable Modbus server communication

Standard.OPCUAClient Standard OPC UA client functions Functions to enable OPC UA client connection, monitor, read, and write data

Definitions:

b CAT object: A composite automation type (CAT) function block includes objects with multiple facets:

v Logic to define its operating modes

v I/O interfaces to exchange data/events with its environment

v Symbols/faceplates for control and monitoring in the HMI

v Documentation that is implicitly part of the project online help

b Application CAT: representing application assets or functions

b Hardware CAT: representing hardware devices that can be added to the hardware configuration, for

device monitoring and control

Presentation (continued)

EcoStruxure Automation Expert Software (continued)

System requirements

Windows – Engineering, HMI, and Archive

System requirements Minimum Performance

Engineering HMI Archive Engineering HMI Archive

Processor 1 GHz 2 GHz or higher

RAM (1) 2 GB 2 GB 2 GB 4 GB 4 GB 4 GB

Hard disk free space (1) 1 GB 1 GB 1 GB 10 GB 10 GB 10 GB

Display resolution 1280x1024 1920x1080 or higher

Pointing device Mouse or compatible

Network access One Ethernet interface

Operating system Microsoft Windows 10 Professional (64-bit) Version 1903 and later,

Microsoft Windows 11 Professional Version 21H2 and later, and

Microsoft Server Version 2019 (1809 and later)

.NET framework .NET 4.8 .NET 4.8 or higher

(1) Requirement is indicated for each software package. More than one software package can be installed on the same device. In this case, you need to add the

respective RAM and hard disk free space requirements together. For example, if you install the HMI and Archive software packages on the same device, the

minimum RAM required is 4 GB (2 GB + 2 GB).

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Industrial automation systems

EcoStruxure Automation Expert

Hardware

Presentation (continued)

EcoStruxure Automation Expert Distributed Programmable Automation Controller

(dPAC) Platforms

EcoStruxure Automation Expert consists of several hardware components working together to create a complete

automation system.

Soft dPAC

Soft dPAC is an edge computing controller designed to execute an application and interact with field devices. This

hardware-agnostic controller is versatile, capable of installation on various hardware such as servers,

workstations, industrial PCs, or microcomputers, provided they meet the necessary hardware and software

requirements.

Soft dPAC supports both LinuxTM and WindowsTM operating systems:

v The Linux SoftdPAC is ideal for real-time control when installed in conjunction with a Linux real-time patch.

v The Windows SoftdPAC is best suited for non-critical applications that do not demand real-time control.

In a Linux environment, multiple instances of Soft dPAC can be seamlessly installed on a single host machine,

allowing tasks like line expansions to be completed without disrupting ongoing processes. This capability

minimizes downtime, thereby enhancing productivity and profitability.

For Windows, one Soft dPAC instance can be installed per host machine.

High Availability Soft dPAC

High Availability Soft dPAC (HA Soft dPAC) represents a software-based high availability industrial automation

system meticulously engineered to operate in a redundant configuration, offering resilience against hardware

failures and ensuring continuous operations. This capability effectively minimizes process downtime, making it

ideal for demanding applications where uninterrupted process flows are critical.

The integration of the high-availability system with EcoStruxure Automation Expert software plays a pivotal role in

enhancing productivity by significantly reducing process downtime.

High Availability Soft dPAC is compatible with the following hardwares:

v Schneider Electric Harmony P6 iPC

v ASRockTM iEP-5000G Series Industrial IoT Controller

v For compatibility with other iPC, please contact your Schneider Electric representative for additional

information.

Moreover, High Availability Soft dPAC seamlessly integrates with Modicon X80 IOs using the BMECRD0100

Remote I/O module, ensuring comprehensive compatibility and functionality within industrial automation setups.

Essential Edge Controller

Essential Edge Controller is part of the Harmony iPC range and runs at the Edge of EcoStruxure. Essential Edge

Controller provides customers the flexibility and versatility in products to be used in control and compute

applications and helps to enhance the customer’s experience by reducing the time to market and improving the

cybersecurity of the solution.

Product reference: HMIBX1A0NDA

Essential Edge Controller is a versatile and open-to-application edge terminal running Linux Operating software. It

is a simple edge device, capable of bringing solid values for and beyond industrial use cases.

v Pre-installed EcoStruxure Automation Expert Soft dPAC, HMI for immediate deployment

v Capability to run third-party applications on the same hardware

The Essential Edge controller has no embedded I/O; it supports Remote I/O on Modicon TM3, X80 expansion

modules with up to 32 devices connected via Modbus TCP/IP or Ethernet IP communication.

Performance Edge Controller

Performance Edge Controller is part of the Harmony iPC range and runs at the Edge of EcoStruxure.

A cutting-edge iPC-based Edge controller with more performance, designed to revolutionize industrial automation.

Equipped with pre-installed Soft dPAC, HMI, and Archive, this powerhouse of a controller offers seamless

integration and unparalleled flexibility. With the ability to install third-party applications on the same hardware, it

empowers you to customize and expand functionality to suit your specific needs.

Performance Edge Controller operates on the robust and secure Linux operating system, helps to provide a stable

and efficient platform for industrial automation. Linux OS contributes to maintaining consistent performance,

enhanced security, and seamless integration with a wide range of industrial applications.

Product Reference: HMIP6CTO

It is a configure-to-order product, where the user can choose the processor type (Celeron / i3), Memory size, and

accessories.

The Performance Edge controller has no embedded I/O; it supports Remote I/O on Modicon TM3, X80 expansion

modules with up to 200 devices connected via Modbus TCP/IP or Ethernet IP communication.

This innovative Performance Edge controller is an all-in-one solution, streamlining operations and maximizing

efficiency.

NOTE: Please contact your Schneider Electric representative for additional information.

HMIBX1A0NDA

HMIP6CTO

Presentation (continued)

EcoStruxure Automation Expert Distributed Programmable Automation Controller

(dPAC) Platforms (continued)

HA Edge Controller

Designed for high availability applications, this HA Edge controller running on Linux OS helps to maintain a

continuous operation, offering a platform for critical industrial processes. Whether in manufacturing, energy

management, or process automation, the versatility of our controller combined with Linux OS opens a world of

possibilities, improving seamless and efficient operations in demanding industrial environments.

Product Reference: HMIP6CTO

It is a configure-to-order product, where the user can choose the processor type (Celeron / i3), Memory size, and

accessories.

v Pre-installed EcoStruxure Automation Expert HA soft dPAC for immediate deployment

v Robust performance for diverse industrial applications

The HA Edge controller has no embedded I/O; it supports Remote I/O on Modicon X80 expansion modules with

up to 200 devices connected via Modbus TCP/IP communication.

NOTE: Please contact your Schneider Electric representative for additional information.

Modicon M580 dPAC

A high-performance, rugged distributed field controller based on the widely successful Modicon M580 ePAC

platform with up to 64 MB ECC RAM for programs and data. The Modicon M580 dPAC supports the robust,

high-performance Modicon X80 I/O catalog(1) and is available in standard and conformal coated versions.

Product references:

b BMED581020: Modicon M580 dPAC (standard)

b BMED581020C: Modicon M580 dPAC (conformal coated)

BMED581020 and BMED581020C controllers support:

v Up to 1,024 discrete I/O channels(2)

v Up to 256 analog I/O channels(2)

v Up to 4 racks of local I/O

Modicon M251 dPAC

A cost-optimized, low-footprint distributed controller based on the machine-specialized Modicon M251 Logic

Controller platform. The Modicon M251 dPAC provides a single Ethernet port for fieldbus, switched dual Ethernet

ports for peer communications, and supports the field-proven TM3 I/O system(1).

Product reference:

b TM251MDESE: Modicon M251 dPAC

The TM251MDESE controller has no embedded I/O; it supports Modicon TM3 I/O expansion modules:

v Up to 448 discrete I/O channels(2)

v Up to 112 analog I/O channels(2)

v Up to 14 Modicon TM3 expansion modules (7 local modules + 7 remote modules) with Modicon TM3 bus

expansion modules (transmitter module and receiver module)

It is possible to control up to 4 TeSys U and TeSys D motor starters by connecting a TM3XTYS4 TM3 module to

the Modicon M251 dPAC.

Modicon M262 dPAC

This is the controller for performance machines. It is powered with a non-isolated 24 V DC power supply, has a

built-in overload protection, embeds a dual-core processor and a 256 MB memory capacity and supports RSTP

protocol.

Product reference:

b TM262L01MDESE8T: Modicon M262 dPAC

The TM262L01MDESE8T controller has no embedded I/O; it supports Modicon TM3 I/O expansion modules:

v Up to 448 discrete I/O channels(2)

v Up to 112 analog I/O channels(2)

v Up to 14 Modicon TM3 expansion modules (7 local modules + 7 remote modules) with Modicon TM3 bus

expansion modules (transmitter module and receiver module)

It is possible to control up to 4 TeSys U and TeSys D motor starters by connecting a TM3XTYS4 TM3 module to

the Modicon M262 dPAC.

(1) Expert/specialist modules are not supported in this release. Please refer to the compatibility list on page 28.

(2) These values are theoretical limits; the device limits are highly dependent on the event load of the user application.

BMED581020

TM251MDESE

TM262L01MDESE8T

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Industrial automation systems

EcoStruxure Automation Expert

Hardware

Presentation (continued)

EcoStruxure Automation Expert Distributed Programmable Automation

Controller (dPAC) Platforms (continued)

Altivar ATV dPAC module

The ATV dPAC module is part of the EcoStruxure Automation Expert distributed controller solution platform,

with 12 MB memory for programs and data. It is intended to be used as a slide-in option for ATV600, ATV900,

and ATV340 variable speed drive (VSD) families(1). The Altivar ATV dPAC module is powered by the drive and

provides dual Ethernet sockets for connection to peer controllers, distributed I/O, or remote secondary

devices.

Product references:

b VW3A3530D: Altivar ATV dPAC module

b VW3A1111: Graphic display terminal

The VW3A3530D dedicated controller has no embedded I/O. However, all standard I/O on the respective

Altivar Process and Altivar Machine drives can be used and extended with I/O modules:

b Up to 23 discrete I/O

b Up to 7 analog I/O

b Encoder interfaces (ATV900 and ATV340)

It is possible to control up to 8 Modbus TCP devices, such as Altivar drives and soft starters, TeSys motor

starters, remote I/O using a TM3BCEIP bus coupler, PowerLogic meters, or Harmony Hub wireless sensors.

For more information about the input/output capability, refer to Altivar dPAC Module VW3A3530D user guide.

(1) For details, please refer to the compatibility table on page 31.

VW3A3530D

Altivar Process drives slots

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Industrial automation systems

EcoStruxure Automation Expert

Hardware

Presentation (continued)

EcoStruxure Automation Expert Distributed Programmable Automation Controller (dPAC) Platforms

(continued)

Information Technology (IT)/Operational Technology (OT) Communication Protocols

Platform Soft dPAC

High

Availability

(Linux)

Simplex Soft

dPAC (Linux)

Simplex Soft

dPAC

(Windows

OS)

M580 dPAC M262 dPAC M251 dPAC ATV dPAC

OPCUA Client – – – – –

Server

MQTT Pub/Sub – – – – –

Modbus TCP Client

Server –

Modbus RTU Client – – – – –

Server – – – – –

EtherNet/IP Scanner (Client) – – –

PROFIBUS DP Client Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through Modbus

TCP third party

gateway

Through Modbus

TCP third party

gateway

ASi-5 / ASi-3 Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through

Modbus TCP

third party

gateway

Through Modbus

TCP third party

gateway

Through Modbus

TCP third party

gateway

HART – – – – –

Open TCP/IP –

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Presentation (continued)

EcoStruxure Automation Expert Distributed Programmable Automation Controller (dPAC) Platforms

Selection guide

EcoStruxure Automation Expert consists of several hardware components working together to create a complete automation system.

High Availability Soft dPAC Simplex Soft dPAC (Linux OS) Simplex Soft dPAC (Windows

OS) Modicon M580 dPAC Modicon M262 dPAC Modicon M251 dPAC Altivar dPAC

Applications Type Virtualized device Virtualized device Virtualized device Embedded device Embedded device Embedded device Embedded device

Specification For critical applications For real time applications For non-real time applications For robust process application For performance modular machines For small modular machines For distributed or Variable Speed

Drive centric applications, including

mini modular machines

Max Application size (Mbytes) Scalable(10) Scalable(10) Scalable(10) 100MB 100MB 20MB 12MB

Commmunication fieldbus and network

performance

Embedded OPCUA Server (20000 variables)

Modbus TCP Client (60 devices)(1)

OPCUA Server (20000 variables)

OPCUA Client

EtherNet/IP (32 devices @20ms RPI)(1)

Modbus TCP Client (60 devices)(1)

Modbus TCP Server (800 variables)(1)

OPCUA Server (20000 variables)

Modbus TCP Client (60 devices)(1)

Modbus TCP Server (800 variables)(1)

OPCUA Server (5000 variables)

EtherNet/IP (16 devices @20ms RPI)(1)

Modbus TCP Client (16 devices)(1)

Modbus TCP Server (800 variables)(1)

OPCUA Server (5000 variables)

EtherNet/IP (16 devices @20ms RPI)(1)

Modbus TCP Client (16 devices)(1)

Modbus TCP Server (800 variables)(1)

Modbus RTU 56kbps

OPCUA Server (1000 variables)

EtherNet/IP (8 devices @20ms RPI)(1)

Modbus TCP Client (16 devices)(1)

Modbus TCP Server (800 variables)(1)

Modbus RTU 56kbps

OPCUA Server (200 variables)

OPCUA Client

Modbus TCP Client (8 devices)(1)

Modbus TCP Server (50 variables)(1)

Optional Profibus DP through Modbus TCP

third party gateway

Asi-5/Asi-3 through Modbus TCP third

party gateway

Profibus DP through Modbus TCP third

party gateway

Asi-5/Asi-3 through Modbus TCP third

party gateway

Profibus DP through Modbus TCP third

party gateway

Asi-5/Asi-3 through Modbus TCP third

party gateway

Profibus DP through Modbus TCP third

party gateway

Asi-5/Asi-3 through Modbus TCP third

party gateway

Profibus DP through Modbus TCP third

party gateway

Asi-5/Asi-3 through Modbus TCP third

party gateway

Profibus DP through Modbus TCP third

party gateway

–

Connectivity services – MQTT Pub/Sub Open TCP/IP

MQTT Pub/Sub

Open TCP/IP Open TCP/IP Open TCP/IP Open TCP/IP

I/O Discrete I/O channels 1750(3) 1750(3) – 352(2) 112(2) 112(2) Up to 23 (depending on drive

reference)

Analog I/O channels 1750(3) 1750(3) – 72 112 112 Up to 7 (depending on drive

reference)

Compatible expansion I/O module ranges(5) Extension I/O – – – 4 Modicon X80 backplane 14 Modicon TM3 14 Modicon TM3 –

Remote I/O 16 Modicon X80 backplane(4) 16 Modicon X80 backplane(4) – – – – –

References Hardware agnostic(8) Hardware agnostic(8) Hardware agnostic(9) BMED581020 /

BMED581020C

TM262L01MDESE8T TM251MDESE VW3A3530D(6) /

VW3A1111(7)

(1) Recommended limit

(2) Typical architecture – I/O can increase or decrease depending on the I/O scan rate or change rate, and the auxiliary application load with connected devices, such as Modbus.

(3) I/O count can increase or decrease depending on the CPU version used on the host iPC, I/O scan rate or change rate, and the auxiliary application load with connected devices, such as Modbus. The host iPC processor speed greatly affects the performance capabilities of the controller. The performance limits can be increased when using more powerful iPC

processors, such as the Intel i5/i7 offerings.

(4) BMECRD0100: Ethernet Remote I/O drop adapter for Automation Expert High Availability

(5) Consult the DIA3ED2140109EN and DIA6ED2131203EN catalog for additional information on the I/O compatibility.

(6) Altivar ATV dPAC module

(7) Graphic display terminal for Altivar ATV340

(8) Reference value based on the Harmony P6 Celeron (2 cores)

(9) Minimum requirements available in the section Windows – Software dPAC (page 13).

(10) Maximum application size can increase or decrease depending on the CPU version on the host iPC.

EcoStruxure Automation Expert Distributed Programmable Automation Controller (dPAC) Platforms

(continued)

System requirements

Linux – Software dPAC

System requirements Minimum Performance Required for RT control

OS Debian 10.3, Ubuntu 18.04 and 20.04, or Raspbian 32- or 64-bit Ubuntu 20.04 with low-latency patch or

other distribution with PREEMPT-RT patch

Docker Docker 19.03.8 and above

CPU X86/ARM 1 GHz or higher Multi-core X86/ARM 1 GHz or higher Dedicated cores

RAM 256 MB 1 GB

HDD/SSD 16 GB 32 GB

Network interface At least one Network

Interface Card (NIC)

Two NICs to isolate control and device networks One NIC per container for RT fieldbuses

Time synchronization NTPv4 client NTPv4 client support with monotonic and drift compensation

Linux – Software dPAC, High Availability(1)

System requirements Description Note

Processor PC Celeron 4305UE, 2 Core, 2 Threads Need Multi-core X86 processor. ARM is not supported for v24.0

RAM SO-DIMM RAM 4 GB Minimum 4GB. ECC support is optional.

Memory M.2 SSD Standard Endurance 128 GB 128 GB is not required. However, it is the lowest that was tested.

Network interface RJ45 GbE Ethernet NIC Three NICs are needed for redundant network configuration.

• One 1 GB speed NIC for interlink connection

• Two 100MB for device network

Operating system Linux Ubuntu 20.04 (Harmony P6)/22.04 (ASRock) tested

(1) A set of 2 manageable switches compatible with RSTP and having at least 6 physical ports is also needed.

Windows – Software dPAC

System requirements Minimum Performance

Processor 1 GHz 2 GHz or higher

RAM(1) 2 GB 4 GB

Hard disk free space(1) 1 GB 10 GB

Display resolution 1280x1024 1920x1080 or higher

Pointing device Mouse or compatible

Network interface One Ethernet interface

Operating system Microsoft Windows 10 Professional (64-bit) Version 1903 and later,

Microsoft Windows 11 Professional Version 21H2 and later, and

Microsoft Server Version 2019 (1809 and later)

.NET framework .NET 4.8 .NET 4.8 or higher

(1) Requirement is indicated for each software package. More than one software package can be installed on the same device. In this case, you need to add the

respective RAM and hard disk free space requirements together. For example, if you install the HMI and Archive software packages on the same device, the

minimum RAM required is 4 GB (2 GB + 2 GB).

Presentation (continued)

Types of standard architectures

EcoStruxure Automation Expert breaks the dependency between the application software and the hardware platform it runs. Together with its

distribution capabilities, EcoStruxure Automation Expert is a unique automation solution to be used in any kind of architecture, from small

machines up to complex process architecture.

Example of Soft dPAC standard architecture

The EcoStruxure Automation Expert architecture for small machines increases engineering efficiency by using the Automatically generated

network transparent communications between controller and HMI objects with many-to-many connectivity and communication protocol for

field devices.

Example of distributed standard architecture

The openness and scalability of the EcoStruxure Automation Expert makes it ready for IT/OT with connectivity AI model by HTTP and apps &

analytics in an architecture with distributed controllers.

EcoStruxure Automation Expert HMI

Switch

Field Device

Soft dPAC

Apps and

Analytics

Edge

M251 dPAC

Connected

Devices

M262 dPAC

Distributed IO

XPSMCM TM3 TM5 STB ATV320 ATV340 ATV320WS

ATV320

(Flex center)

TeSys

Island

3rd party

roller drives

Vision

system

AS-i

Gateway

Weighing

system

Barcode

reader

Motor Control Sensors 3rd Party Products

M580

dPAC

AS-i

Safety

Safety

Ethernet/IP

Harmony P6 PacDrive

M580

CIP safety

CIP Safety

IO

3rd Party PCHMIBSC

HMIBMU

EcoStruxure Automation Expert Orchestrated

AVEVA Automation

Expert HMI

ATV dPACCRD

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Industrial automation systems

EcoStruxure Automation Expert

Architecture

Presentation (continued)

Example of complex standard architecture

The complex architecture below illustrates the extensive possibilities of distributed application for the EcoStruxure Automation Expert solution

among the different dPACs. This example is focused on a combination of Modicon M580d and Altivar ATVd dPACs.

Control Network

ATVd Pumps (6)

ATVd Motors (4) ATVd Pumps (2) ATVd Pumps (7)

ATVd Motors (2) ATVd Pumps (7)

Control Room

Standard PC

x 1

EAE Embedded HMI

x 1

EcoStruxure Automation Expert

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Industrial automation systems

EcoStruxure Automation Expert

Architecture

Presentation (continued)

Types of high-availability architectures

The EcoStruxure Automation Expert high-availability system is used for more demanding applications in terms of the availability of the control/

command system where no interruption of the process can be tolerated. The high-availability system with EcoStruxure Automation Expert

software helps increase productivity by minimizing process downtime.

High-availability Soft dPAC based on Ethernet RIO architecture

The high-availability configuration comprises two identical iPCs (industrial computers), each hosting a High-Availability Soft dPAC, and

configured to run in a Pair where one instance (a Partner) is driving the process while the other Partner is ready to take over control, if the first

one stops working.

The two Partners check each other's availability by communicating over two links:

• A dedicated cable (the HA Interlink), and

• The device network, which also carries commands and diagnostics.

In a high-availability Soft dPAC topology based on an Ethernet RIO architecture, devices are hardwired on remote I/O over Ethernet by

BMECRD1020 (RIO drop adapter for Modicon X80 I/Os modules). This high-availability system is used for sensitive processes that require a

bumpless I/O control takeover time.

1. Linux-based iPC pair, each hosting an instance of High Availability Soft dPAC

2. HA Interlink: 1GB/s Network Interface Card (NIC)/connection

3. Redundant network: 100MB/s with NIC bonding

4. Linux-based standalone iPC, hosting an instance of non-redundant Soft dPAC

5. Non-redundant Modicon X80 I/O drop with BMECRD0100 RIO drop adapter and redundant power supplies

6. Non-redundant Modicon X80 I/O drop with BMECRD0100 RIO drop adapter and redundant power supplies

7. Remote I/O RSTP - enabled ring network

8. Workstation running EcoStruxure Automation Expert build time, RSTP configuration software

9. Workstation running AVEVA System Platform (ASP), AVEVA Operation Management Interface (OMI), and AVEVA historian. Communication

is over OPC UA

10. Workstation running EcoStruxure Automation Expert Runtime HMI

11. Managed switches, for example, Modicon switch

Presentation (continued)

Components of a high-availability system

High-Availability Soft dPAC pair

At the heart of a high-availability architecture are two iPCS - Preferred Primary and Non-Preferred Primary, with identical hardware

configurations, based on Linux software connected via a high-speed (1 Gbps) communication link.

The Preferred Primary device executes the application program and controls the I/Os located in Modicon X80 drops. The Non-Preferred

Primary remains in the background. In the event of a detected error affecting the Primary device, the Standby system switches over

automatically, changing over the execution of the application program and control of the I/O to the Standby device with an up-to-date data

context. Once the changeover is complete, the Standby device becomes the Primary device while the former Primary device is being cleared

from the detected error: when clearance is done, the device reconnects to the standby system and acts as the Standby device. The

changeover from Primary to Standby is performed smoothly at the outputs and is completely transparent to the process.

Modicon X80 Redundant power supplies and compatible backplanes

For high-availability applications, two BMXCPS●●02 redundant power supplies can be used on the same rack to increase the availability of

power supply. They are supported by 6-slot BMEXBP0602 backplane and 10-slot BMEXBP1002 backplane equipped with dual slots marked

CPS1 and CPS2. On CPS1 slot, the power supply is initially set as Primary and on CPS2 slot, as Standby. When power stops being supplied

in accordance with expected rate, they switch roles so that power can be continuously delivered.

See Modicon X80 modules catalog for more details.

Example of complex high-availability architecture

The complex architecture illustrates the extensive possibilities of the High-Availability Soft dPAC in terms of cross-communication, RIO and

DIO networks:

1. Linux-based iPC pair, each hosting an instance of High Availability Soft dPAC

2. HA Interlink: 1GB/s NIC/connection

3. Redundant network: 100MB/s with NIC bonding

4. Remote I/O RSTP enabled ring network

5. Non-redundant X80 I/O drop with:

- BMECRD0100 RIO drop adapter

- Redundant power supplies on the main backplane

- Extended main backplane

6. Distributed I/O connected to field devices (sensors, actuators)

7. Non-redundant Modicon X80 I/O drop with BMECRD0100 RIO drop adapter

8. BMEAHI0812/BMEAHO0412 Hart I/O modules

9. Modbus TCP devices in an Intelligent power and motor control center (including PM5500 power meter series and MasterPact MTZ)

connected to TeSysT motor controllers and Altivar processors

10. Managed switches

11. Workstation running AVEVA System Platform (ASP), AVEVA Operation Management Interface (OMI), and AVEVA historian

Communication is over OPC UA

12. Workstation running EcoStruxure Automation Expert Runtime HMI

13. Cross-communication with Altivar ATVdPAC for motor control

EcoStruxure Automation Expert – Perpetual licensing

The EcoStruxure Automation Expert offer provides a simplified approach to the software licensing model. The offer has two categories of

licenses – Build and Run.

EcoStruxure Automation Expert – Build license

The Build software requires a license per seat to create Automation Expert based applications. The Build engineering license provides the

capability to create, configure, and manage UAO runtime control applications, HMI, archive, and network/device topologies.

The Build licenses can be perpetual or subscription-based(1) and are available in four types:

b Trial: The engineering software includes a full function demo mode for 42 days unlicensed.

b Lite: A basic set of features is included to focus on machine and small process applications. This license allows the use of machine controller

platforms and restricted process control platforms. The limitations of this type of license will be included in future release version 24.1.

b Standard: A basic set of features included and can be extended by buying add on licenses to extend functionalities. The add ons that are

available with EcoStruxure Automation Expert Standard licenses are:

v Asset Link for AVEVA OMI

v High Availability Engineering

v Asset Link for Bulk Engineering is already included in the Standard engineering license v24.0

b Professional: This type of license includes all currently available features. Any new features available in future releases within the first year

following the activation date will be included for the software updates.

Each commercial license provides:

b The capability to design, develop, simulate with HMI, and commission a complete system

b Collaborative engineering (SVN client) plugin

b Physical topology editor

b Free software updates, within the first 12 months from the activation date

b Support desk from 9 am to 5pm

b Access to private communities on exchange.se.com for p2p support, libraries, project samples, training material, TVDAs, and so on.

(1) For more information, refer to EcoStruxure Automation Expert – Subscription-based licensing

Build license compatibility

Supported platforms Lite Standard Professional

Soft dPAC 1 Max

Soft dPAC High Availability 1 Max

ATV dPAC

M251 dPAC

M262 dPAC

M580 dPAC 1 Max

Add-ons (per seat)

Asset Link for Bulk Engineering –

Asset Link for AVEVA OMI – Optional

High Availability Engineering Optional Optional

BUILD Perpetual

Lite License

(Incl. Asset Link for

Bulk

Engineering add-on)

Basic features

High

Availability

add-on

Asset Link for

AVEVA OMI

add-on

(Incl. Asset Link for Bulk

Engineering + Asset link

for AVEVA OMI + High

Availability add-ons)

HMI - Panel

add-on

HMI - Operator

Station add-on

Standard License Professional License Application License for

dPAC

RUN Perpetual

Application License for Soft dPAC

Device

Small

Micro

Large

Simplex

€/Tiered-pack

€/Controller

€/User

€/User €/Device

Version

Tiered

devices

packs

*Only for Build = Lite

HA

10

Devices* 100

Devices 1000

Devices 5000

Devices

22

Industrial automation systems

EcoStruxure Automation Expert

Licenses

Presentation, references

(continued)

EcoStruxure Automation Expert – Perpetual licensing (continued)

Engineering license references

The Build engineering licenses are available in different types: Lite, Standard, or Professional. Standard and Professional licenses can be

perpetual or subscription-based(1) and are currently offered for single seat use only.

Reference Description

EALBTEP24 Lite Engineering License

EALBTC Standard Engineering License

EALBFC Professional Engineering License

EALUAOC Engineering license for UAO vendor

The standard engineering license includes the "Asset Link for Bulk Engineering" add-on and allows for the addition of the following add-ons:

Reference Description

EALBATC Add-on for Asset Link for AVEVA OMI

EALBAHC Add-on for High Availability

Presentation, references

(continued)

EcoStruxure Automation Expert – Perpetual licensing (continued)

EcoStruxure Automation Expert – Run licenses

In addition to the Build engineering license that is required to create EcoStruxure Automation Expert applications, for the operation and

maintenance of the application, each hardware should have a Run license.

The Run licenses will be based on the control type of Schneider Electric dPAC controllers and the number of devices connected for the Soft

dPAC PC-based control.

The Run application licenses are available in perpetual and subscription-based model. For more information, refer to EcoStruxure Automation

Expert – Subscription-based licensing.

For exact calculation of the number of devices and controller type for the application license, a software license configurator

for EcoStruxure Automation Expert is available on our website.

Run license compatibility

Available Licenses Lite Standard Professional

Device

Micro

Small

Large

10 Pack – –

100 Pack –

1000 Pack –

5000 Pack –

The available application licenses for dPAC controllers are:

Reference Description

EALADP Application license for one dPAC runtime instance, DEVICE

EALANP Application license for one dPAC runtime instance, NANO

EALAMP Application license for one dPAC runtime instance, MICRO

EALASP Application license for one dPAC runtime instance, SMALL

EALALP Application license for one dPAC runtime instance, LARGE

Run Application (A+B+C)

Control

Control Applicaton A

SE or UAO Hardware

Select type of controller

Devices connected via hardwired or any

communication protocols

(Modbus, EtherNet/IP, OPC-UA, Profibus)

Devices connected via any communication protocols

(Modbus, EtherNet/IP, OPC-UA, Profibus)

In case of Orchestration or Secondary sensing use cases,

EAE Device license = 0.3 * no. of connected devices

Control Applicaton B

IPC hardware IPC hardware

Other Controllers

and/or Gateways

Control Applicaton C

Orchestration

DEVICE

ATV dPAC M251 dPAC,

M262 dPAC

M580 dPAC

(Ext.Backplane)

M580 dPAC

(Single

Backplane)

MICRO SMALL LARGE Tiered devices pack

10 devices*

100 devices

1000 devices

5000 devices

EALDXP and EALDHAXP, are only available with Automation Expert Lite Build time

EALDXP*

EALDCP

EALDMP

EALDVMP

EALDHAXP*

EALDHACP

EALDHAMP

EALDHAVMP

Simplex version High Availability version

(continued)

EcoStruxure Automation Expert – Perpetual Licensing (continued)

The Automation Expert HMI license includes rights to both HMI and Archive runtimes. All runtime

licenses are perpetual. Different license types are required depending on the platform on which the

runtime is installed, as per the following table:

EcoStruxure Automation Expert – HMI license

Automation Expert Runtime Platform License type

HMI(1) Harmony ST6

HMI range

1 license per HMI runtime instance

HMI(1) PC-type HMI

(Windows 10/Linux)

1 license per HMI runtime instance

(1) Each license includes both Automation Expert HMI and Automation Expert Archive runtime rights.

The Automation Expert HMI Runtime licenses are:

Reference Description

EALH1P Automation Expert HMI Runtime - Panel (ST6)

EALH2P Automation Expert HMI Runtime - Operator (iPC)

For exact calculation of the number of devices and controller type for the application license, a software license configurator for Automation Expert is available on se.com.

Run application license references

Reference Description

EALDXP(1) Application Standard 10 Devices

EALDCP Application Standard 100 Devices

EALDMP Application Standard 1000 Devices

EALDVMP Application Standard 5000 Devices

EALDHAXP(1) Application High Availability 10 Devices

EALDHACP Application High Availability 100 Devices

EALDHAMP Application High Availability 1000 Devices

EALDHAVMP Application High Availability 5000 Devices

(1) Only available with Automation Expert Lite build time.

Download the HMIBMI, HMIBMO,

and HMIP6 ranges catalog

(continued)

EcoStruxure Automation Expert – Subscription-based licensing

To provide customers with more business and economic model flexibility and reduced obsolescence risk, both Build and Run licenses are

available under a subscription-based model consisting of 1-year termed subscriptions. The subscription-based licenses model is available for

project business with end-users.

Each commercial license provides:

b The capability to design, develop, simulate with HMI, and commission a complete system

b Collaborative engineering (SVN client) plugin

b Physical topology editor

b Free software updates

b Support desk from 9 am to 5pm

b Access to private communities on exchange.se.com for p2p support, libraries, project samples, training material, TVDAs, and so on.

Build subscription-based licenses

The Build subscription–based licenses are available in three different types:

b Trial: The engineering software includes a full function demo mode for 42 days unlicensed.

b Standard: A basic set of features equivalent to Standard perpetual-based license.

b Professional: this version includes all available features, including:

v Asset Link for AVEVA OMI

v High Availability Engineering

The Build subscription-based licenses are offered for single-seat use only. A license is needed per user.

Reference Description

EALBTS1 Build - Standard Engineering Yearly

EALBTS2 Build - Professional Engineering Yearly

Run subscription-based licenses

The Run subscription-based licenses are available in two different types:

b Standard: for simplex applications.

b High Availability: for high availability applications.

The Run subscription-based licenses are sized per device. A license is needed per device. To know how to measure the number of devices of

your application, refer to the EcoStruxure Automation Expert – Perpetual Licensing.

Reference Description

EALOMD1 Run - Standard Device Yearly

EALOMD2 Run – High Availability Device Yearly

Please contact your Schneider Electric representative for additional information.

In addition to the advantages included in Perpetual licenses, subscription-based licenses include:

b Access to upcoming software releases and features in the scope of your license

b Customer adoption support plan, with a Trusted Advisor that will support you to reduce your time to value with each new release and its

features, recommend the appropriate evolutions, and support you on license lifecycle and renewal process.

Build Subscription

(1-year term license, per user)

Software

Standard

License

Application Design

Service

Onsite Training,

Lifecycle Consulting,

Engineering Service

Block of Support

Service

EAE Configuration

Training

Cybersecurity

Assessment

Service

Application

for Standard

Device

Professional

License

(including all options)

Included in all packages:

Customer Support Plan, Software Assurance, Customer Adoption Management

Application for

High Availability

Device

Yearly

Services

Ad hoc

Run Subscription

(1-year term license, per device)

Licenses - Example

EcoStruxure Automation Expert Licensing – Architecture

Example of single high-availability architecture

Build license

Reference Description No. of Seats

EALBTEP24 Lite Engineering License 1

Reference Description No. of Licenses

EALBAHC Add-on for High Availability 1

Run license

Unit 1 - High Availability Control 50 devices

Reference Description No. of Licenses

EALBAHC Application High Availability 10 Devices 5

Reference Description No. of Licenses

EALH2P Automation Expert HMI Runtime Operator 1

50 Field Devices

High Availability

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Industrial automation systems

EcoStruxure Automation Expert

Licenses - Example

EcoStruxure Automation Expert Licensing – Architecture

Example of complex high-availability architecture

Build license

Reference Description No. of Seats

EALBFC Professional Engineering License 1

Run license

Unit 1 – High Availability Control 100 devices

Reference Description No. of Seats

Application High Availability 100 Devices 1EALDHACP

Unit 2 – 1 M262d Control 50 devices

Reference Description No. of Licenses

EALAMP Application license for one dPAC runtime instance, MICRO 1

Unit 3 – Simplex Control 100 devices

Reference Description No. of Licenses

EALDCP Application Standard 100 Devices 1

100 Field Devices 100 Field Devices

50 Field Devices

High Availability M262d Simplex Control

Presentation, references

(continued)

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Compatibility Industrial automation systems

EcoStruxure Automation Expert

Product compatibility according to dPAC platform

List of Modicon X80 hardware compatible with Modicon M580 dPAC, Modicon CRD for Simplex/High

Availability Soft dPAC (Linux OS)

Type Reference Description Compatibility with

Modicon M580 dPAC

Compatibility with

Modicon CRD for

Simplex/High Availability

Soft dPAC (Linux OS)

Rack BMEXBP0400 4-slot Ethernet backplane Yes Yes

Rack BMEXBP0400H Ruggedized 4-slot Ethernet backplane Yes Yes

Rack BMEXBP0602 6-slot Ethernet backplane redundant PS Yes Yes

Rack BMEXBP0602H Ruggedized 6-slot Ethernet backplane redundant PS Yes Yes

Rack BMEXBP0800 8-slot Ethernet backplane Yes Yes

Rack BMEXBP0800H Ruggedized 8-slot Ethernet backplane Yes Yes

Rack BMEXBP1002 10-slot Ethernet backplane redundant PS Yes Yes

Rack BMEXBP1002H Ruggedized 10-slot Ethernet backplane redundant PS Yes Yes

Rack BMEXBP1200 12-slot Ethernet backplane Yes Yes

Rack BMEXBP1200H Ruggedized 12-slot Ethernet backplane Yes Yes

Rack BMXXBC008K Backplane extension cable 0.8 m/2.6 ft Yes Yes

Rack BMXXBC015K Backplane extension cable 1.5 m/4.9 ft Yes Yes

Rack BMXXBC030K Backplane extension cable 3 m/9.8 ft Yes Yes

Rack BMXXBC050K Backplane extension cable 5 m/16.4 ft Yes Yes

Rack BMXXBC120K Backplane extension cable 12 m/39 ft Yes Yes

Rack BMXXBE1000 Standard backplane extender Yes Yes

Rack BMXXBE1000H Ruggedized standard backplane extender Yes Yes

Rack BMXXBE2005 Backplane extender kit Yes Yes

Rack BMXXBP0400 4-slot backplane Yes Yes

Rack BMXXBP0400H Ruggedized 4-slot backplane Yes Yes

Rack BMXXBP0600 6-slot backplane Yes Yes

Rack BMXXBP0600H Ruggedized 6-slot backplane Yes Yes

Rack BMXXBP0800 8-slot backplane Yes Yes

Rack BMXXBP0800H Ruggedized 8-slot backplane Yes Yes

Rack BMXXBP1200 12-slot backplane Yes Yes

Rack BMXXBP1200H Ruggedized 12-slot backplane Yes Yes

SD card BMXRMS004GPF Optional M580 SD card 4 GB Yes No

Analog I/O BMXAMI0410 4 voltage/current isolated high-speed analog inputs Yes Yes

Analog I/O BMXAMI0410H Ruggedized 4 voltage/current isolated high-level analog inputs Yes No

Analog I/O BMXAMI0800 8 voltage/current non-isolated fast analog inputs Yes No

Analog I/O BMXAMI0810 8 voltage/current isolated fast analog inputs Yes Yes

Analog I/O BMXAMI0810H Ruggedized 8 voltage/current isolated fast analog inputs Yes Yes

Analog I/O BMXAMO0410 4 voltage/current isolated analog outputs Yes Yes

Analog I/O BMXAMO0410H Ruggedized 4 voltage/current isolated analog outputs Yes Yes

Analog I/O BMXAMO0802 8 current non-isolated analog outputs Yes Yes

Analog I/O BMXAMM0600 4 analog inputs - 2 analog outputs Yes No

Analog I/O BMXAMM0600H Ruggedized 4 analog inputs - 2 analog outputs Yes No

Analog I/O BMXAMO0210 2 isolated analog outputs Yes No

Analog I/O BMXAMO0210H Ruggedized 2 voltage/current isolated analog outputs Yes No

Analog I/O BMXART0814 8 isolated TC/RTD inputs Yes Yes

Analog I/O BMXART0814H Ruggedized 8 isolated TC/RTD inputs Yes Yes

Analog I/O BMEAHI0812 8 current isolated analog inputs, HART No Yes

Analog I/O BMEAHO0412 4 current isolated high-level analog outputs, HART No Yes

Power BMXCPS2000 Standard AC power supply Yes Yes

Power BMXCPS2010 Standard isolated DC power supply Yes Yes

Power BMXCPS3020 High-power isolated 24 to 48 V DC power supply Yes Yes

Power BMXCPS3020H Ruggedized high-power isolated 24 to 48 V DC power supply Yes Yes

Power BMXCPS3500 High-power AC power supply Yes Yes

Power BMXCPS3500H Ruggedized high-power AC power supply Yes Yes

Power BMXCPS3522 Redundant 125 V DC power supply Yes Yes

Power BMXCPS3540T High-power 125 V DC power supply Yes Yes

Power BMXCPS4002 Redundant AC power supply Yes Yes

Power BMXCPS4022 Redundant 24 to 48 V DC power supply Yes Yes

Discrete I/O BMXDDI1602 16x 24 V DC sink discrete inputs Yes Yes

Discrete I/O BMXDDI1602H Ruggedized 16x 24 V DC sink discrete inputs Yes Yes

Discrete I/O BMXDDI3202K 32x 24 V DC sink discrete inputs Yes No

Discrete I/O BMXDDI6402K 64x 24 V DC sink discrete inputs Yes Yes

Discrete I/O BMXDDM16025 8x 24 V DC discrete inputs, 8x discrete relay outputs Yes No

Discrete I/O BMXDDM16025H Ruggedized 8x 24 V DC discrete inputs, 8x discrete relay outputs Yes No

Discrete I/O BMXDDO1602 16 transistor source 0.5 A discrete outputs Yes Yes

Compatibility (continued) Industrial automation systems

EcoStruxure Automation Expert

Product compatibility according to dPAC platform

List of Modicon X80 hardware compatible with Modicon M580 dPAC, Modicon CRD for Simplex/High

Availability Soft dPAC (Linux OS)

Type Reference Description Compatibility with

Modicon M580 dPAC

Compatibility with

Modicon CRD for

Simplex/High Availability

Soft dPAC (Linux OS)

Discrete I/O BMXDDO1602H Ruggedized 16 transistor source 0.5 A discrete outputs Yes Yes

Discrete I/O BMXDDO6402K 64 transistor source 0.1 A discrete outputs Yes Yes

Discrete I/O BMXDRA0815 8 isolated relay outputs Yes No

Discrete I/O BMXDRA0815H Ruggedized 8 isolated relay outputs Yes No

Discrete I/O BMXDRA1605 16 discrete relay outputs Yes No

Discrete I/O BMXDRA1605H Ruggedized 16 discrete relay outputs Yes No

Discrete I/O BMXDAI0814 8x 100...120 V AC isolated inputs Yes No

Discrete I/O BMXDAI1604 16x 100...120 V AC capacitive inputs Yes No

Discrete I/O BMXDAI1604H Ruggedized 16x 100...120 V AC capacitive inputs Yes No

Discrete I/O BMXDAO1605 16x 100...240 V AC triac outputs Yes No

Discrete I/O BMXDAO1605H Ruggedized 16x 100...240 V AC triac outputs Yes No

Discrete I/O BMXDDM16022 8 inputs - 24 V DC - 8 outputs - solid state Yes No

Discrete I/O BMXDDM16022H 8 inputs - 24 V DC - 8 outputs - solid state- severe environment Yes No

Discrete I/O BMXDDM3202K 16x 24 V DC inputs - 16x solid state outputs Yes No

Other BMXNRP0200 Fiber converter MM/LC 2-channel, 100 m/328 ft Yes No

Other BMXNRP0201 Fiber converter SM/LC 2-channel, 100 m/328 ft Yes No

Expert BMXEHC0800 8 high-speed counter channels Yes No

Expert BMXEHC0800H Ruggedized 8 high-speed counter channels Yes No

Expert BMXEAE0300 3-channel SSI encoder interface module Yes No

Expert BMXEAE0300H Ruggedized 3-channel SSI encoder interface module Yes No

List of TM3 hardware compatible with Modicon M251 dPAC and M262 dPAC

Type Reference Description

Discrete I/O TM3DI16/TM3DI16G 16 discrete inputs

Discrete I/O TM3DI32K 32 discrete inputs, HE10 connection

Discrete I/O TM3DI8/TM3DI8A/TM3DI8G 8 discrete inputs

Discrete I/O TM3DQ8T/TM3DQ8TG 8x 0.5 A transistor source discrete outputs

Discrete I/O TM3DQ16T/TM3DQ16TG 16x 0.5 A transistor source discrete outputs

Discrete I/O TM3DQ16R/TM3DQ16RG 16x 2 A discrete relay outputs

Discrete I/O TM3DQ32TK 32x 0.1 A transistor source discrete outputs, HE10 connection

Discrete I/O TM3DQ8U/TM3DQ8UG 8x 0.3 A transistor sink discrete outputs

Discrete I/O TM3DQ16U/TM3DQ16UG 16x 0.3 A transistor sink discrete outputs

Discrete I/O TM3DQ32UK 32x 0.4 A transistor sink discrete outputs, HE10 connection

Analog I/O TM3AI2H/TM3AI2HG 2 high-resolution analog inputs, +-10 V, 0-10 V, 0-20 mA, 4-20 mA, 16-bit, 1 ms

Analog I/O TM3AI4/TM3AI4G 4 analog inputs, +-10 V, 0-10 V, 0-20 mA, 4-20 mA, 12-bit, 1 ms

Analog I/O TM3AI8/TM3AI8G 8 analog inputs, +-10 V, 0-10 V, 0-20 mA, 4-20 mA, 12-bit, 1 ms

Analog I/O TM3AQ2/TM3AG2G 2 analog outputs, +-10 V, 0-10 V, 0-20 mA, 4-20 mA, 12-bit, 1 ms

Analog I/O TM3AQ4/TM3AQ4G 4 analog outputs, +-10 V, 0-10 V, 0-20 mA, 4-20 mA, 12-bit, 1 ms

Safety I/O TM3SAC5R/TM3SAC5RG CAT3 Safety, 1 function, max. PL d/SIL3, 3 outputs 6 A relays

Safety I/O TM3SAF5R/TM3SAF5RG CAT4 Safety, 1 function, max. PL e/SIL3, 3 outputs 6 A relays

Safety I/O TM3SAFL5R/TM3SAFL5RG CAT3 Safety, 2 functions, max. PL d/SIL3, 3 outputs 6 A relays

Safety I/O TM3SAK6R/TM3SAK6RG CAT4 Safety, 3 functions, max. PL e/SIL3, 3 outputs 6 A relays

Mixed analog I/O TM3AM6/TM3AM6G 4 analog outputs, 2 analog inputs, +-10 V, 0-10 V, 0-20 mA, 4-20 mA, 12-bit, 1 ms

Thermocouple mixed TM3TM3/TM3TM3G 2 temperature inputs + 1 analog output

TC (J, K, R, S, B, T, N, E, C, L)

RTD (NI100, NI1000, PT100, PT1000)

(+-10 V, 0-10 V) (0-20 mA, 4-20 mA) 16-bit, 100 ms

Thermocouple input TM3TI4/TM3TI4G 4 temperature inputs

TC (J, K, R, S, B, T, N, E, C, L)

RTD (NI100, NI1000, PT100, PT1000),

(+-10 V, 0-10 V) (0-20 mA, 4-20 mA) 16-bit, 100 ms

Thermocouple input TM3TI8T/TM3TI8TG 8 temperature inputs, NTC, PTC, and

TC (J, K, R, S, B, T, N, E, C, L), 16-bit 100 ms

Relay I/O TM3DM8R/TM3DM8RG 8x 2 A relay outputs

Relay I/O TM3DM24R/TM3DM24RG 24x 2 A relay outputs

Relay I/O TM3DQ8R/TM3DQ8RG 8x 2 A relays outputs

Other TM3XREC1 TM3 remote receiver module

Other TM3XTRA1 TM3 remote transmitter module

Other TM3XTYS4 TM3 parallel interface for 4 Tesys motor starters

Expert TM3XHSC202/TM3XHSC202G High-speed counting, 2 HSC channels, 10 inputs, 8 outputs

Compatibility (continued) Industrial automation systems

EcoStruxure Automation Expert

Product compatibility according to dPAC platform

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Compatibility (continued) Industrial automation systems

EcoStruxure Automation Expert

Product compatibility according to dPAC platform

List of Altivar hardware compatible with Altivar ATV dPAC

Type Reference Description Compatible

Drive ATV340●●●N4 Altivar Machine drives Yes

Drive ATV340●●●N4E ≤ D22 Altivar Machine drives No

Drive ATV340●●●N4E ≥ D30 Altivar Machine drives Yes

Drive ATV630●●●●●

ATV630●●●●●F

Altivar Process drives Yes

Drive ATV650●●●●●

ATV650●●●●●E

ATV650●●●●●F

Altivar Process drives Yes

Drive ATV930●●●●●

ATV930●●●●●C

ATV930●●●●●F

Altivar Process drives Yes

Drive ATV950●●●●●

ATV950●●●●●E

ATV950●●●●●F

Altivar Process drives Yes

Drive ATV660●●●●●

ATV680●●●●●

Altivar Process drive systems Yes

Drive ATV960●●●●●

ATV980●●●●●

Altivar Process drive systems Yes

Drive ATV99●●●●● Altivar Process drive systems Yes

Drive ATV6A0●●●●●

ATV6B0●●●●●

Altivar Process Modular drives Yes

Drive ATV9A0●●●●●

ATV9B0●●●●●

Altivar Process Modular drives Yes

Drive ATV6L0●●●●●

ATV9L0●●●●●

Altivar Process liquid-cooled drives Yes

Other VW3A1111 Graphic display terminal Yes

Other VW3A1112 Door mounting kit Yes

Mixed I/O VW3A3203 Extended I/O module - 6 digital inputs/

2 digital outputs/2 analog inputs

Yes

Mixed I/O VW3A3204 Extended relay module - 3 relay outputs Yes

Encoder VW3A3420 Digital encoder interface module for Altivar 340 and Altivar 9pp variable speed drives Yes

Encoder VW3A3422 Analog encoder interface module for Altivar 340 and Altivar 9pp variable speed drives Yes

Encoder VW3A3423 Resolver interface module for Altivar 340 and Altivar 9pp variable speed drives Yes

Encoder VW3A3424 HTL encoder interface module for Altivar 340 and Altivar 9pp variable speed drives Yes

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References

Modicon M580 dPAC

Local I/O capacity Communication

ports

Service ports Reference Weight

kg/lb

Up to 1024 discrete I/O

Up to 256 analog I/O

64 MB integrated memory

2 1 BMED581020

BMED581020C

0.848/

1.872

Standards and certifications

The Modicon M580 dPAC automation platform has been developed to comply with the principal national and

international standards concerning electronic equipment for industrial automation systems.

b Requirements specific to programmable controllers: functional characteristics, immunity, resistance, etc.:

IEC/EN 61131-2 and IEC/EN/UL/CSA 61010-2-201

b Requirements specific to power utility automation systems: IEC/EN 61000-6-5, IEC/EN 61850-3 (with

installation restrictions)

b Requirements specific to railway applications: EN 50155/IEC 60571 (with installation restrictions)

b Ex areas:

v For USA and Canada: Hazardous location class I, division 2, groups A, B, C, and D

v For other countries: CE ATEX (2014/34/EU) or IECEx in defined atmosphere Zone 2 (gas) and/or

Zone 22 (dust)

b Merchant navy requirements of the major international organizations: unified in IACS (International

Association of Classification Societies)

b Compliance with European Directives for CE marking:

v Low voltage: 2014/35/EU

v Electromagnetic compatibility: 2014/30/EU

v Machinery: 2006/42/EC

Up-to-date information on which certifications have been obtained is available on our website.

Modicon M580 dPACs are considered as open equipment and are designed for use in industrial environments,

in pollution degree 2, overvoltage category II (IEC 60664-1), and in low-voltage installations, where the main

power branch is protected on both wires by devices such as fuses or circuit breakers limiting the current to 15 A

for North America and 16 A for the rest of the world.

Industrial automation systems

EcoStruxure Automation Expert

Modicon M580 dPAC

BMED581020

EAE_23643079_OPSPH20002

Characteristics

Service conditions and recommendations relating to the environment

Modicon M580 dPAC

automation platform

Modicon M580 dPAC harsh I/O platform

Temperature Operation 0...60 °C/32...140 °F -25...+70 °C/-13...158 °F

Storage -40...85 °C/-40...185 °F -40...85 °C/-40...185 °F

Relative humidity

(without

condensation)

Cyclical humidity 5...95% up to 55 °C/131 °F 5...95% up to 55 °C/131 °F

Continuous humidity 5...93% up to 55 °C/131 °F 5...93% up to 60 °C/140 °F

Altitude Operation 0…2,000 m/0...6,562 ft (full specification: temperature and isolation)

2,000...5,000 m/6,562...16,404 ft (temperature derating: approx. 1 °C/400 m

(33.8 °F/1,312 ft), isolation 150 V/1,000 m (3,281 ft))

For accurate temperature derating calculation, refer to IEC 61131-2 Ed 4.0 Annex A

Modicon X80 I/O power supply modules

BMXCPS2010 BMXCPS3020

BMXCPS3020H

BMXCPS3540T BMXCPS2000 BMXCPS3500

BMXCPS3500H

BMXCPS4002

Supply voltage Nominal voltage 24 V c 24...48 V c 125 V c 100...240 V a 100...240 V a

Limit voltages 18...31.2 V c 18...62.4 V c 100...150 V c 85...264 V a 85...264 V a

Nominal frequencies – – – 50/60 Hz 50/60 Hz

Limit frequencies – – – 47/63 Hz 47/63 Hz

Protective treatment of the Modicon M580 dPAC automation platform

The Modicon M580 dPAC platform meets the requirements of “TC” treatment (treatment for all climates).

For installations in industrial production workshops or environments corresponding to “TH” treatment (treatment

for hot and humid environments), Modicon M580 dPAC must be embedded in enclosures with minimum IP54

protection.

The Modicon M580 dPAC platform offers protection to IP20 level and protection against access to terminals

(enclosed equipment) (1). They can therefore be installed without an enclosure in reserved-access areas that do

not exceed pollution level 2 (control room with no dust-producing machine or activity). Pollution level 2 does not

take account of more severe environmental conditions: air pollution by dust, smoke, corrosive or radioactive

particles, vapors or salts, molds, insects, etc.

(1) In cases where a slot is not occupied by a module, a BMXXEM010 protective cover must be installed.

(e): Tests required by European directives (e) and based on IEC/EN 61131-2 standards.

Environment tests

Immunity to LF interference (e) (1)

Name of test Standards Levels

Voltage and frequency variations IEC/EN 61131-2; IEC/EN 61000-6-2;

IEC 61000-4-11

0.85...1.10 Un - 0.94...1.04 Fn; 4 steps

t = 30 min

IACS E10; IEC 61000-4-11 0.80 Un...0.90 Fn; 1.20 Un...1.10 Fn;

t = 1.5 s/5 s

Direct voltage variations IEC/EN 61131-2; IEC 61000-4-29;

IACS E10 (PLC not connected to charging

battery)

0.85...1.2 Un + ripple: 5% peak; 2 steps

t = 30 min

Third harmonic IEC/EN 61131-2 H3 (10% Un), 0°/180°; 2 steps t = 5 min

Voltage interruptions IEC/EN 61131-2; IEC/EN 61000-6-2;

IEC 61000-4-11; IEC 61000-4-29;

IACS E10

Power supply immunity:

b 10 ms for a and c PS2 (20 ms DS

criteria)

b Check operating mode for longer

interruptions up to 5 s, 85% Un

b For IACS, 3 times 30 s in 5 min,

85% Un

IEC/EN 61131-2; IEC/EN 61000-6-2;

IEC 61000-4-11

For a PS2:

b 20% Un, t0: ½ period

b 40% Un, cycle 10/12

b 70% Un, cycle 25/30

b 0% Un, cycle 250/300

Voltage shut-down and start-up IEC/EN 61131-2 b Un…0…Un; t = Un/60 s

b Umin…0…Umin; t = Umin/5 s

b Umin…0.9 Udl…Umin; t = Umin/60 s

Magnetic field IEC/EN 61131-2; IEC 61000-4-8

(for MV power stations: IEC 61000-6-5;

IEC 61850-3)

Power frequency: 50/60 Hz, 100 A/m

continuous ...1,000 A/m; t = 3 s; 3 axes

IEC 61000-4-10 Oscillatory: 100 kHz...1 MHz, 100 A/m;

t = 9 s; 3 axes

Conducted common mode

disturbances range 0 Hz ...150 kHz

IEC 61000-4-16

(for MV power stations: IEC 61000-6-5;

IEC 61850-3)

For remote systems:

b 50/60 Hz and c, 300 V, t = 1s

b 50/60 Hz and c, 30 V, t = 1 min

b 5 Hz…150 kHz, sweep 3 V…30

b For a: 10 V

b For c: 10 V cont. or 100 V, t = 1 s

Where:

b PS1 applies to PLC supplied by battery, PS2 applies to PLC energized from a or c supplies

b Un: nominal voltage; Fn: nominal frequency; Udl: detection level with power on

(1) Devices must be installed, wired, and maintained in accordance with the instructions provided in the manual “Grounding and

Electromagnetic Compatibility of PLC Systems”.

(2) These tests are performed without an enclosure, with devices fixed on a metal grid and wired as per the recommendations in

the manual “Grounding and Electromagnetic Compatibility of PLC systems”.

(e): Tests required by European directives (e) and based on IEC/EN 61131-2 standards.

References (continued) Industrial automation systems

EcoStruxure Automation Expert

Modicon M580 dPAC

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References (continued)

Modicon CRD, I/O bus over Ethernet for Simplex/High Availability Soft dPAC (Linux OS)

RSTP Communication ports Service ports Reference Weight

kg/lb

2 1 BMECRD0100

BMECRD0100C

0.848/

1.872

Standards and certifications

The Modicon CRD platform has been developed to comply with the principal national and international

standards concerning electronic equipment for industrial automation systems.

b Requirements specific to programmable controllers: functional characteristics, immunity, resistance, etc.:

IEC/EN 61131-2 and IEC/EN/UL/CSA 61010-2-201

b Requirements specific to power utility automation systems: IEC/EN 61000-6-5, IEC/EN 61850-3 (with

installation restrictions)

b Requirements specific to railway applications: EN 50155/IEC 60571 (with installation restrictions)

b Ex areas:

v For USA and Canada: Hazardous location class I, division 2, groups A, B, C, and D

v For other countries: CE ATEX (2014/34/EU) or IECEx in defined atmosphere Zone 2 (gas) and/or

Zone 22 (dust)

b Merchant navy requirements of the major international organizations: unified in IACS (International

Association of Classification Societies)

b Compliance with European Directives for CE marking:

v Low voltage: 2014/35/EU

v Electromagnetic compatibility: 2014/30/EU

v Machinery: 2006/42/EC

Up-to-date information on which certifications have been obtained is available on our website.

Modicon CRD is considered as open equipment and are designed for use in industrial environments, in pollution

degree 2, overvoltage category II (IEC 60664-1), and in low-voltage installations, where the main power branch

is protected on both wires by devices such as fuses or circuit breakers limiting the current to 15 A for North

America and 16 A for the rest of the world.

Industrial automation systems

EcoStruxure Automation Expert

Modicon Ethernet Remote I/O

BMECRD0100

BMECRD0100_main

Characteristics

Service conditions and recommendations relating to the environment

Modicon CRD automation

platform

Modicon CRD harsh I/O platform

Temperature Operation 0...60 °C/32...140 °F -25...+70 °C/-13...158 °F

Storage -40...85 °C/-40...185 °F -40...85 °C/-40...185 °F

Relative humidity

(without

condensation)

Cyclical humidity 5...95% up to 55 °C/131 °F 5...95% up to 55 °C/131 °F

Continuous humidity 5...93% up to 55 °C/131 °F 5...93% up to 60 °C/140 °F

Altitude Operation 0…2,000 m/0...6,562 ft (full specification: temperature and isolation)

2,000...5,000 m/6,562...16,404 ft (temperature derating: approx. 1 °C/400 m

(33.8 °F/1,312 ft), isolation 150 V/1,000 m (3,281 ft))

For accurate temperature derating calculation, refer to IEC 61131-2 Ed 4.0 Annex A

Modicon X80 I/O power supply modules

BMXCPS2010 BMXCPS3020

BMXCPS3020H

BMXCPS3540T BMXCPS2000 BMXCPS3500

BMXCPS3500H

BMXCPS4002

BMXCPS4002S

BMXCPS4002H

Supply voltage Nominal voltage 24 V c 24...48 V c 125 V c 100...240 V a 100...240 V a

Limit voltages 18...31.2 V c 18...62.4 V c 100...150 V c 85...264 V a 85...264 V a

Nominal frequencies – – – 50/60 Hz 50/60 Hz

Limit frequencies – – – 47/63 Hz 47/63 Hz

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Protective treatment of the Modicon CRD automation platform

The Modicon CRD platform meets the requirements of “TC” treatment (treatment for all climates).

For installations in industrial production workshops or environments corresponding to “TH” treatment (treatment

for hot and humid environments), Modicon CRD must be embedded in enclosures with minimum IP54 protection.

The Modicon CRD platform offers protection to IP20 level and protection against access to terminals

(enclosed equipment) (1). They can therefore be installed without an enclosure in reserved-access areas that do

not exceed pollution level 2 (control room with no dust-producing machine or activity). Pollution level 2 does not

take account of more severe environmental conditions: air pollution by dust, smoke, corrosive or radioactive

particles, vapors or salts, molds, insects, etc.

(1) In cases where a slot is not occupied by a module, a BMXXEM010 protective cover must be installed.

(e): Tests required by European directives (e) and based on IEC/EN 61131-2 standards.

Environment tests

Immunity to LF interference (e) (1)

Name of test Standards Levels

Voltage and frequency variations IEC/EN 61131-2; IEC/EN 61000-6-2;

IEC 61000-4-11

0.85...1.10 Un - 0.94...1.04 Fn; 4 steps

t = 30 min

IACS E10; IEC 61000-4-11 0.80 Un...0.90 Fn; 1.20 Un...1.10 Fn;

t = 1.5 s/5 s

Direct voltage variations IEC/EN 61131-2; IEC 61000-4-29;

IACS E10 (PLC not connected to charging

battery)

0.85...1.2 Un + ripple: 5% peak; 2 steps

t = 30 min

Third harmonic IEC/EN 61131-2 H3 (10% Un), 0°/180°; 2 steps t = 5 min

Voltage interruptions IEC/EN 61131-2; IEC/EN 61000-6-2;

IEC 61000-4-11; IEC 61000-4-29;

IACS E10

Power supply immunity:

b 10 ms for a and c PS2 (20 ms DS

criteria)

b Check operating mode for longer

interruptions up to 5 s, 85% Un

b For IACS, 3 times 30 s in 5 min,

85% Un

IEC/EN 61131-2; IEC/EN 61000-6-2;

IEC 61000-4-11

For a PS2:

b 20% Un, t0: ½ period

b 40% Un, cycle 10/12

b 70% Un, cycle 25/30

b 0% Un, cycle 250/300

Voltage shut-down and start-up IEC/EN 61131-2 b Un...0...Un; t = Un/60 s

b Umin...0...Umin; t = Umin/5 s

b Umin...0.9 Udl...Umin; t = Umin/60 s

Magnetic field IEC/EN 61131-2; IEC 61000-4-8

(for MV power stations: IEC 61000-6-5;

IEC 61850-3)

Power frequency: 50/60 Hz, 100 A/m

continuous ...1,000 A/m; t = 3 s; 3 axes

IEC 61000-4-10 Oscillatory: 100 kHz...1 MHz, 100 A/m;

t = 9 s; 3 axes

Conducted common mode

disturbances range 0 Hz ...150 kHz

IEC 61000-4-16

(for MV power stations: IEC 61000-6-5;

IEC 61850-3)

For remote systems:

b 50/60 Hz and c, 300 V, t = 1s

b 50/60 Hz and c, 30 V, t = 1 min

b 5 Hz...150 kHz, sweep 3 V...30

b For a: 10 V

b For c: 10 V cont. or 100 V, t = 1 s

Where:

b PS1 applies to PLC supplied by battery, PS2 applies to PLC energized from a or c supplies

b Un: nominal voltage; Fn: nominal frequency; Udl: detection level with power on

(1) Devices must be installed, wired, and maintained in accordance with the instructions provided in the manual “Grounding and

Electromagnetic Compatibility of PLC Systems”.

(2) These tests are performed without an enclosure, with devices fixed on a metal grid and wired as per the recommendations in

the manual “Grounding and Electromagnetic Compatibility of PLC systems”.

(e): Tests required by European directives (e) and based on IEC/EN 61131-2 standards.

References (continued) Industrial automation systems

EcoStruxure Automation Expert

Modicon Ethernet Remote I/O

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Modicon M251 dPAC

Local I/O capacity Device ports Service ports Reference Weight

kg/lb

No embedded I/O,

supporting Modicon TM3 I/O

expansion modules

2 1 TM251MDESE 0.848/

1.872

Standards and certifications

b Standards

v IEC/EN 61131-2 (Edition 2 2007)

v UL508

v ANSI/ISA 12.12.01-2007

v CSA C22.2 No. 213 and No. 142

b Certifications

v e

v cULus Listing Mark

v RCM

v Achilles

v UKCA

Environmental characteristics

Service conditions and recommendations relating to the environment

Temperature Operation Vertical installation: -10…35 °C/14…122 °F

Horizontal installation: -10…55 °C/14…131 °F

Storage -40…70 °C/-40…158 °F

Relative humidity

(without condensation)

Operation 10...95%

Storage

Altitude Operation 0…2,000 m/0…6,562 ft: complete specification for temperature and

exposure

Storage 0…3,000 m (0…9,842 ft)

Immunity to mechanical stress 1131 b Rail mounting:

v 5…8.4 Hz (amplitude 3.5 mm/0.138 in.)

v 8.4…150 Hz (acceleration 1 g)

b Panel mounting:

v 8.7…150 Hz (acceleration 3 g)

Merchant Navy 2…13.2 Hz (amplitude 1.0 mm/0.039 in.)

13.2…100 Hz (acceleration 0.7 g)

Supply charecteristics

Power supply 24 V c

Voltage limit Including ripple 19.2...28.8 V c

Immunity to micro-cuts Class PS-2 10 ms

Max. consumption 45 W

References (continued) Industrial automation systems

EcoStruxure Automation Expert

Modicon M251 dPAC

TM251MDESE

EAE_23643079_OPSPH20005

37

Modicon M262 dPAC

Local I/O capacity Device ports Service ports Reference Weight

kg/lb

No embedded I/O,

supporting Modicon TM3

I/O expansion modules

2 1 TM262L01MDESE8T 0.655/

1.444

Standards and certifications

b Standards

v IEC/EN 61131-2 (Edition 2 2007)

v UL 61010-1, 61010-2-201

v ANSI/ISA 12.12.01-2007

v CSA C22.2 No. 213, No. 61010-1, No. 61010-2-201

b Certifications

v e

v cULus, cULus HazLoc Class I Division 2 CSA 22-2 No 213

v RCM

v Achilles

v KC

v EAC

Environmental characteristics

Service conditions and recommendations relating to the environment

Temperature Operation Vertical installation: -20…50 °C/-4…122 °F

Horizontal installation: -20…60 °C/-4…140 °F

Flat mounting: -20…45 °C/-4…113 °F

Storage -40…85 °C/-40…185 °F

Relative humidity

(without condensation)

Operation 5...95%

Storage

Altitude Operation 0…2,000 m/0…6,562 ft

Storage 0…3,000 m (0…9,842 ft)

Immunity to mechanical stress 3.5 mm at 2…8.4 Hz

1 gn at 8.4…200 Hz

Supply charecteristics

Power supply 24 V c (-15...20%)

Voltage limit 20.4...28.8 V c

Immunity to micro-cuts 0.01 ms

Max. consumption 82 W

References (continued) Industrial automation systems

EcoStruxure Automation Expert

Modicon M262 dPAC

Modicon M262 dPAC module

TM262L01MDESE8T_image

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Altivar ATV dPAC

ATV dPAC module

Local I/O capacity Device ports Service ports Reference Weight

kg/lb

Supporting Altivar Drives

I/O embedded, expansion

and encoder modules:

b Up to 23 discrete I/O

b Up to 7 analog I/O

b 12 MB integrated

memory

2 – VW3A3530D 0.020/

0.044

Standards and certifications

Depending on the specific drive type used for ATV dPAC integration, the standards and certifications must be

checked in the corresponding ATV340/600/900 manual.

b Standards

v EN/IEC 61800-3

v EN/IEC 61800-5-1

v IEC 61000-3-12

v IEC 60721-3

v IEC 61508

v SEMI F47-0706

v UL508C and UL61800-5-1

v RoHS-2 according to EU directive 2002/95/EC

v REACH according to EU regulation 1907/2006

b Certifications

v CE

v UL

v CSA

v RCM

v EAC

v ATEX

v DNV-GL

Environmental characteristics

Altivar Process and Altivar Machine drives are designed to operate in a variety of environments, including harsh

environments. The conditions stated below are general data and must be verified with the respective ATV600,

ATV900, and ATV340 manuals for the specific drive type used.

Service conditions and recommendations relating to the environment

Temperature Operation As standard: -15...50 °C/+5...122 °F

With derating: -15...60 °C/+5...140 °F

Storage and transport -40…70 °C/-40…158 °F

Relative humidity

(without condensation)

Operation 5...95%

Storage

Altitude Operation b 0…1,000 m/0…3,281 ft without derating

b 1,000…4,800 m/3,281…15,700 ft with derating of 1% per

100 m/328 ft

Protection of drives IP20 to IP55

Withstand to harsh environment b Chemical class 3C3 conforming to IEC/EN 60721-3-3

b Mechanical class 3S3 conforming to IEC/EN 60721-3-3

b Printed circuit boards with protective coating

Environmental characteristics

Compliance with electromagnetic compatibility requirements has been incorporated into the design of Altivar

Process and Altivar Machine drives. They are e marked according to the European EMC directive (2014/30/EU).

Note: Depending on the specific drive type used for ATV dPAC integration, the EMC compliance values must be

checked in the corresponding ATV340/600/900 manual.

References (continued) Industrial automation systems

EcoStruxure Automation Expert

Altivar ATV dPAC

VW3A3530D

EAE_23643079_OPSPH20001

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Graphic display terminal

Description Reference Weight

kg/lb

To be used with ATV340

(ATV600 and ATV900 are equipped with the graphic display terminal as

standard)

Display 240 x 160 pixels, 8 lines

Real-time clock with 10-year backup battery, to keep time when the drive is

powered off

Protection IP65

To be procured separately for ATV340

(delivered as standard with ATV600 and ATV900)

VW3A1111 0.020/

0.044

Remote mounting kit

Description Reference Weight

kg/lb

Remote mounting kit

For remote mounting of graphic display terminal,

suitable for ATV340, ATV600, and ATV900 families

Protection IP65

VW3A1112 0.020/

0.044

Remote mounting cordset

Description Length

(m/ft)

Reference Weight

kg/lb

Remote mounting cordset

Equipped with 2 RJ45 connectors for connection of

the graphic display terminal to the drive

1/

3.28

VW3A1104R10 0.050/

0.110

3/

9.84

VW3A1104R30 0.150/

0.331

5/

16.4

VW3A1104R50 0.250/

0.551

10/

32.8

VW3A1104R100 0.500/

1.102

Connector cable

Description Length

(m/ft)

Reference Weight

kg/lb

USB/Mini B USB cable

for connecting the display terminal to a PC

– TCSXCNAMUM3P –

VW3A1111

VW3A1112

PF130899PF130903

TCSXCNAMUM3P

TCSXCNAMUM3P

VW3A1104R10

EAE_23643079_OPSPH20003

References (continued) Industrial automation systems

EcoStruxure Automation Expert

Altivar ATV dPAC

Services Industrial automation systems

Schneider Electric offers lifecycle services for your industrial automation systems based on EcoStruxure Automation Expert. Our lifecycle services include field and digital services. We believe, with our advanced processes and tools, we are your trusted expert in field and digital services to help you achieve greater functional safety, efficiency, sustainabilty, and resilience in your plant operations.

We offer services that are designed to address your needs as you plan, install, operate, and optimize your industrial automation systems based on EcoStruxure Automation Expert. These include:

b Consulting services

b Maintenance and support services

b Training Services

b Migration Services

For more information, visit our Industrial Automation Services page.

Consulting services

Consulting services are about bringing our expertise to help find solutions to some of

your key operational challenges. Be it about maximizing the business value from your digital transformation initiatives, identifying improvement opportunities in your industrial automation system lifecycle management plans, or improving your cybersecurity posture and compliance, we can help. Take a look at some of our

consulting offerings:

Security consulting Our cybersecurity consultants will help you assess and review your EcoStruxure

Automation Expert systems to detect gaps, identify risks, uncover any security

malpractices, assess your staff’s security competencies, provide emergency

response services, and more. For more information, visit our Cybersecurity

Services page.

IA lifecycle consulting Audits performed by our service team provide insights and recommendations to

help improve the maintenance plans of industrial automation assets. This service

helps identify potential risks to the reliability and maintainability of these assets and

plan mitigation actions. Watch the video to learn more about our IA Lifecyle

Consulting Service.

Maintenance and support services

Our maintenance and support offerings help you quickly restore your operations in

the event of an unplanned downtime incident. They can also help reduce the risk of

occurrence and the associated costs. Take a look at some of our maintenance and

support offerings:

Extended warranty The extended warranty offer gives you the option to extend the warranty of selected

Schneider Electric hardware by up to three years.

Note: Please contact your Customer Care Center for offer availability.

Spare parts, exchanges, and repairs These solutions help you to respond, in the most optimal manner, to requests for

spare parts for your EcoStruxure Automation Expert system based on Schneider

Electric hardware. Services include:

b Parts management service:

Onsite or shared spares inventory, managed by us, to help ensure parts

availability, while optimizing costs.

b Repair:

Product repairs performed onsite when possible, or at our repair centers.

b Exchange:

A refurbished product is provided in exchange for a product returned with a

detected fault.

Note: Availability of these services may vary depending on the applicable Schneider Electric

hardware. Please contact your Customer Care Center for offer availability.

Maintenance and support services (continued)

Maintenance and support contracts Our Support and Maintenance Service Offers, are a simplified and modular annual

support services agreements, designed to provide you with the right level of

flexibility and confidence to meet your support and maintenance needs for your

industrial automation systems based on EcoStruxure Automation Expert.

Available as Advantage Service Plan (ASP) for Automation Control or as Customer

FIRST (CF) Program for Automation Control, they offer a pre-packaged set of

services relevant to operating & maintaining an EcoStruxure Automation Expert

Systems. For further customization, a set of optional services are available.

The following table provides a snapshot of the plan:

Included Services

Support Levels

ASP CF

Essential Primary

Core Support and Services

Priority Technical Support Access – NBH(a) SLA(b) SLA (b)

mySchneider Portal Access – Premium support Yes Yes

Software Version Update(c) Yes Yes

Optional services(d)

24/7 Priority Technical Support – Phone

Block of Support Hours

(a) Normal Business Hours

(b) Service Level Agreement

(c) Excludes labor and hardware

(d) Subject to local availability

With the enhancements to EcoStruxure Automation Expert V24.0 licensing system, we will progressively offer a more digital experience for customers seeking to maintain the currency of their EcoStruxure Automation Expert software. With this experience, customers with our support and maintenance service offers, will be able to update, in a self-service mode, their EcoStruxure Automation Expert software installation, as and when installations are ready. Please contact your Customer Care Center for offer availability.

Training services

Our training services are designed for users to take maximum advantage of our industrial automation systems based on EcoStruxure Automation Expert. Our training catalog includes courses on:

b Automation fundamentals

b IEC 61499 concepts

b EcoStruxure Automation Expert engineering and configuration

For more information, please visit our Learning Services Home Page or send us an email.

Modernization and migration services

Over the years, we have been involved in migrating many major automation systems

to Schneider Electric. Our migration services, based on this expertise and

complemented by a set of dedicated tools, helps to minimize the risks and costs

involved in such upgrades to an open EcoStruxure Automation Expert-based

system. The available set of tools and services are outlined below:

Tools and services

Source platforms

Tools and services

Reverse

engineering

Application conversion

service

Wiring systems

for Modicon X80

Schneider

Electric

Modicon Premium Yes 2023 Yes

Rockwell

Automation

SLC 500 Yes Yes Yes

PLC-5 Yes Yes Yes

ControlLogix Yes 2023 _

In addition to the above, we can also offer project-specific solutions. Please contact

your local service teams for more information.

Industrial automation systems

EcoStruxure Automation Expert

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July 2024 - V8.0